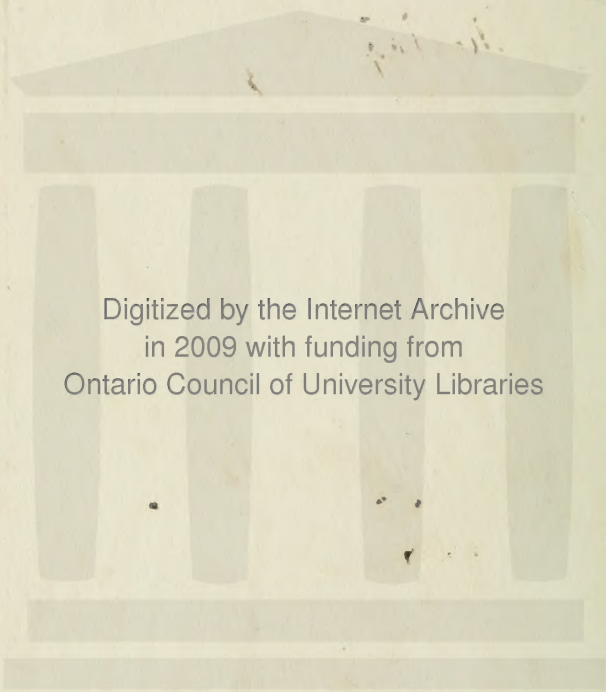


OUR EARTH
AS A Whole

A FIRST BOOK OF GEOGRAPHY

PART. II.

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TARR AND McMURRY GEOGRAPHIES

OUR EARTH AS A WHOLE

A FIRST BOOK OF MODERN GEOGRAPHY

PART II

WITH COLORED MAPS AND NUMEROUS ILLUSTRATIONS, CHIEFLY
PHOTOGRAPHS OF ACTUAL SCENES

REVISED AND ADAPTED FOR CANADIAN SCHOOLS

By W. C. CAMPBELL

AUTHOR OF "MODERN GEOGRAPHY," ETC.

TORONTO

GEORGE N. MORANG & COMPANY, LIMITED

1902

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PREFACE

THIS little book is a continuation of the child's first step in the study of geography, as set forth in "Our Home and its Surroundings." The same plan has been adopted and the same principles followed. The object has not been to produce a Gazetteer and an Atlas of the World, but to create interest and to stimulate inquiry.

FORM. — As in the first part, the form is convenient to handle, the type clear to read, and the subject treated in such a manner as to appeal to the child's natural desire to gain knowledge with the least possible effort.

MAPS. — These will be found to contain all that it is important to know at this stage; not being cumbered with too many unnecessary names, they are clear, distinct, and impressive.

ILLUSTRATIONS. — The illustrations have been carefully selected, with the view of impressing facts and scenes on the memory. They are, in nearly every case, actual photographs, and are intended to be supplementary to the text in their educational value.

REVIEWS AND SUGGESTIONS.—These have been given, not with the object of supplying a series of set questions, but of assisting the memory of the pupil and of hinting to the teacher a broader field of inquiry.

APPENDIX. — Figures and statistics have been rarely mentioned throughout the book, as it has not been considered advisable to burden the young memory with such detail. In the appendix, however, will be found much valuable information, which can be made available for supplementary lessons.

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OUR EARTH AS A WHOLE



I. FORM AND SIZE OF THE EARTH¹

Its Form. — Hundreds of years ago, before America was discovered, men thought the earth was flat. They travelled so little that they had no idea of its form or of its size.

A few men who had studied the matter believed that the earth was a round ball, and that if one travelled straight on in any direction, he would in time return to the place from which he started. You can understand this by pushing your finger around on the outside of an orange, until it comes back to the starting-point.

Christopher Columbus believed this, and went to Spain, hoping to obtain money to secure ships for a long voyage to prove it.

Men were at that time in the habit of going to a land, called India, for spices, silks, and jewels. To reach India from Spain they travelled thousands of miles *eastward*: but Columbus said that if the earth were round, like a ball, India might be reached by going *westward* across the ocean, and the distance would be much less. He therefore asked the king of Spain for ships and men to make such a journey.

The king refused the request, because the idea seemed ridiculous; but the queen came to his aid, and, at last, on August 3, 1492, he

¹The use of a globe in this study is very important. Small globes may be obtained from dealers in school supplies at a very slight cost.

sailed westward on a voyage from which many thought he would never return; but, after a journey of several weeks, land was reached on October 12.

Thinking he had reached India, he called the natives Indians; but instead of that he had discovered Cuba and other islands near the coast of North America; a continent and large ocean still lay between him and India. These newly discovered lands became known as the *New World*, to distinguish them from the *Old World*, where all white men then lived.



FIG. 1.

Columbus landing in America and taking possession of it in the name of the king of Spain.

After Columbus returned in safety, other men dared to explore the New World. One of them, named Magellan, started to sail round the earth; and though he was killed when he had reached the Philippine islands, his ships went on and completed the journey. Since then many people have made the voyage in various directions, and the earth has been studied so carefully that every one now knows it is round.

The great round earth is also called the *globe* or *sphere*.

The reason that it does not seem round to us, is that we see so little of it at a time.

If you see very little of an orange, it will not look round either. To prove this, place upon an orange a piece of paper with a small hole in it, so that none of the surface is seen excepting that which shows through the hole. This part does not appear round, but flat.

If we could get far enough away from the earth to see a large part of it at once, as we are when looking at an orange, or at the moon, we would easily be able to observe its roundness (Fig. 2).



FIG. 2.

The sphere.

Size of the Earth. — Our sphere is so large that even the highest mountains, when compared to the whole earth, are no larger than a speck of dust when compared to an apple. Lofty mountains are rarely more than three or four miles high; but the *diameter* of the earth, or the distance from one side to the other, through the *centre of the earth*, is nearly eight thousand miles.

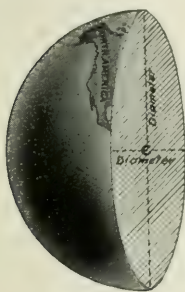


FIG. 3.

Figure of the earth cut in two, to show the diameter, the line passing through the centre (*c*).

The *circumference* of the earth, or the distance around the outside of it, is about twenty-five thousand miles. This is a little more than three times the diameter, and you will find that the circumference of any sphere is always a little more than three times its diameter. Prove this with an orange.

II. DAILY MOTION OF THE EARTH, AND ITS RESULTS

The Axis and Poles.—The earth seems to us to be motionless, while *the sun appears to move* round it each day, rising in the east and setting in the west. But in reality neither of these things happens.

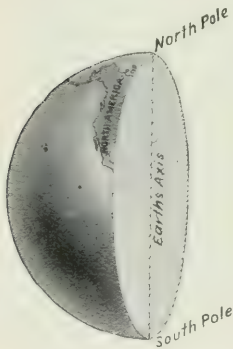


FIG. 4.

A drawing of the earth cut through to show the axis and poles.

Instead of being without motion, the earth is whirling round with tremendous speed. You have perhaps watched a wheel spin about upon a rod or pin, and have noticed that the outside goes rapidly, while the part near the pin moves much more slowly. It is the same with the earth; and just as we speak of the wheel turning upon a pin, so we speak of the earth turning upon its *axis*.

But the axis of a wheel is something real, while the axis of the earth is merely *a line that we think of* as reaching through the earth's centre and extending to the surface in both directions.

The two ends of this axis are called the *poles of the earth*, one end being the *north pole*, the other the *south pole*.

Allowing an apple to represent the earth, a knitting needle or a stick pushed through its centre would represent its axis, and the two

ends on the surface, the two poles. You can then spin the apple, very much as the earth spins (Fig. 6).

If you were to go directly north from the place where you live, you would in time come to the north pole; or, if far enough south, to the south pole. Many men have tried to cross the icy seas (Fig. 9) that surround the north pole. If one ever reaches that point, he will not find a projection; but the north star, toward which the axis points, will be almost directly overhead.

The Equator. — Midway between these poles, we think of another line drawn around the earth on the outside. This is called the *equator*, because all parts of it are *equally* distant from each of the poles. On page 3 the distance around the earth was given; what, then, is the length of the equator?



FIG. 5.

That half of the sphere containing the New World, to show the position of the poles and the equator.

As the earth spins on its axis, all points on the surface must go with it, as every part of the skin of an apple turns with it. Since the earth makes one complete turn each day, a man at the equator travels twenty-five thousand miles every twenty-four hours. What a whirling motion that is! It is at the rate of over one thousand miles an hour, while the fastest trains run little more than sixty miles an hour.

Why do not places considerably north or south of the equator move as rapidly as those at the equator?

Gravity. — What, then, is to hinder our flying away from the earth, just as, when a stone is whirled about on a string, it flies away the moment the string breaks? And why is not all the water hurled from the ocean?

The reason is that the earth draws everything toward it. If you push a book from your desk, it falls to the floor; and when you spring into the air, you quickly return to the ground. All objects are drawn *downward*, because the earth is pulling upon them. It attracts them much as a horse-shoe magnet attracts pieces of iron.

The force with which the earth draws all objects toward it is called *gravity*; and it is because of gravity that the water, trees, houses, and we ourselves, do not fly off when the earth is turning at such a tremendous speed.

Sunrise and Sunset. — The sun *seems* to rise in the east and set in the west. This could not be the case if the earth did not turn or *rotate* toward the east: for all heavenly bodies must first appear in the direction toward which the earth turns. This eastward rotation of the earth, therefore, explains why the sun seems to rise and set as it does.

Hundreds of years ago people thought that the sun actually rose, and, after moving across the heavens, set in the west. We still use the words "sunrise" and "sunset" which they used, although we know that the sun *appears* to rise only because the earth rotates.

Day and Night. — It is this rotation that causes day and night. A lamp can light only one-half of a ball at a time, as you know. So the sun can light only half of the great earth ball at one time. That being the case, if our globe stood perfectly still, there would always be day on the half next to the sun, and night on the other half.

But since the earth rotates, the place where it is day is constantly changing: and while the sun is setting for people far to the east of us, it is rising for those far to the west. When it is noon where you live, it is midnight on the other side of the earth. Thus each place has its

period of daylight and darkness; and as the earth makes one complete rotation every twenty-four hours, the day and night together must last just that length of time.



FIG. 6.

An apple lighted by a candle on one side, to illustrate the cause of day and night.

III. THE ZONES

Boundaries of the Zones. — The sun's rays feel warmer at noon than in the morning or evening because the sun is more nearly overhead at noon, and the rays then reach us nearly vertically.



FIG. 7.

A map of the zones. The colors suggest *sharp* differences between the zones on the two sides of the boundaries; but you should remember that the changes are *very gradual*.

For the same reason the sun seems hotter in summer than in winter, and in some parts of the earth than in others.

The hottest part of the earth is near the equator, for in that region the sun at midday is directly over the heads of the people. That is the case, for a part of the year, as far north as the line on the map (Fig. 7) marked *tropic of Cancer*, and for another part of the year, as

far south as the one marked *tropic of Capricorn*. Point to them on Figures 28, 29, and 30. These lines are more than three thousand miles apart, a distance nearly as great as that across the Dominion of Canada from Halifax to Vancouver: and over that vast area the heat is intense, or *torrid*. Those who live there wear only the very lightest clothing, and the savages have almost none (Fig. 8).

But farther north and south the heat becomes less and

less intense, because the rays of the sun, even at noon, approach the earth at a greater slant. There is a region, then, on each side of this broad hot belt, where it is neither very hot nor very cold, but *temperate*.

Finally, near the poles, the rays are very slanting, as they are in our early morning or late afternoon. There it is so cold, or *frigid*, that the ground never thaws out, the ice never entirely disappears, and very little vegetation can grow.

Torrid Zone. — Thus one part of the earth has a hot climate. There the noonday sun is always so directly over the heads of the inhabitants that they never have winter.

This hot region extends entirely around the earth, like a great belt, and the equator is in the middle of it. This is called the *tropical belt*, or the *tropical or torrid zone*, and sometimes the *equatorial belt*. Why the latter name?

Temperate Zones.

— On the north and south sides of this are the two temperate zones. People living in the *north temperate zone* find the sun to the south of them at noon, even in summer; and their shadows always



FIG. 8.

Philippine savages hunting; their home is in the torrid zone, and they need almost no clothing.

fall toward the north. But in the *south temperate zone* the midday sun is always in the north. Which way must the shadows fall in that zone?

Notice the position of the sun at midday where you live, and also the direction and length of your shadow at that time. In which of the temperate zones do you live?



FIG. 9.

Cape York Eskimos, Greenland, in their summer dress, standing by their sleds on the ice-covered sea.

Frigid Zones. — North of the north temperate zone, and south of the south temperate, are the *frigid zones*, where the sun is never high in the heavens, but even at midday is near the *horizon*. There the shadows are very long, as they are with us in the late afternoon. In consequence, while at the equator there is never any winter, near the poles there is never any real summer weather.

The northern of these zones is called the *north frigid*

zone (Fig. 7) ; the southern, the *south frigid zone*. They are also known as the *polar zones*, since they surround the poles.

It is so cold that no one has ever been able to reach either of the poles. These are surrounded by miles and miles of snow and ice, and vessels hundreds of miles away from them are in danger of being crushed by ice, or held by it so that they cannot move.

Hemispheres. — The half of our sphere north of the equator is called the *northern hemisphere* (or half sphere), the southern half, the *southern hemisphere*. The earth is also considered to be divided into halves by a circle running north and south through both poles, the western half, containing the New World, being called the *western hemisphere*, and the eastern half, containing the Old World, the *eastern hemisphere*.

IV. HEAT WITHIN THE EARTH, AND ITS EFFECTS

Heat in Mines. — While much is known about the surface of the earth, very little is certain about its interior. The reason for this is that people cannot go far down below the surface in order to see what is there.



FIG. 10.

Melted rock, from a volcano in the Hawaiian Islands, flowing over the face of a precipice into the water.

In some places there are mines reaching fully a mile below the surface. This may seem a great depth; but when it is remembered that it would be necessary to go four thousand times as far to reach the centre, it is plain that this is really a short distance. A mile below the surface of the earth is not so much as the thickness of the skin of an apple, compared with the thickness of the apple itself.

In all of these mines, and in many deep wells, men find solid rock, usually covered at the surface with soil; but no one has ever gone beyond this rock.

It is interesting to note that the farther miners have dug down into the earth, the warmer they have found it. The thermometer rises about one degree for every fifty or sixty feet, and some mines, as they have been deepened, have become so hot that men could no longer work in them.

Melted Rock. — This has led to the belief that, if it were possible to go still deeper, the earth would be found to grow hotter and hotter, until, several miles below the surface, it might be hot enough to melt rocks.

Another fact leading to the same belief is that, in some regions, melted rock, called *lava*, actually flows out of the earth, and then cools to form solid rock (Fig. 10). In some places so much lava has flowed forth at different times, and collected about the opening called the *crater*, that a mountain peak has been built. Such peaks are called *volcanoes* (Fig. 11), and some of them are many thousand feet high. In Canada there are no volcanoes.

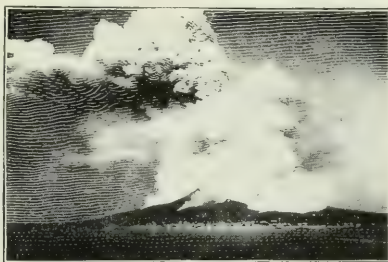


FIG. 11.

Vesuvius, in Italy, sending out lava, ashes, and steam during an eruption some years ago.

The Earth's Crust. — From a study of the earth it seems certain that, although the outside is now cold, it was once hot, and that the mass within is still hot. It may be compared to a biscuit that is still hot inside, although its crust has become cool. In fact, this cold outside part of the earth is generally called the *earth's crust*.

Cause of Mountains. — It was stated (Our Home, p. 18) that some parts of the earth have been raised to form mountain ranges, while others have been lowered to form valleys. We are now ready to explain how this has happened.

You have, perhaps, seen a blacksmith put a tire upon a wheel. He heats the tire so hot that it expands, and it is then easily placed over the wheel. But when the iron cools it shrinks, so that the tire then fits the wheel tightly

The hot interior of the earth is undergoing a similar change to that of the iron tire cooling, since every year it is slowly growing cooler, and, therefore, shrinking or *contracting*. This allows the cool crust to settle; but, being too large, it wrinkles, or puckers, causing the rocks to bend and break, and forming great mountain ranges and valleys.



FIG. 12.

An apple wrinkled through drying.

One sees something of the same kind in an apple that has become dry and wrinkled (Fig. 12). It has dried because some of the water beneath the tough skin has gone into the air as vapor; thus the inside has been made smaller. The skin of the apple, like the crust of the earth, has then settled down and become wrinkled.

Cause of Continents and Ocean Basins. — The mountains and valleys are not the largest wrinkles on the earth's surface. As the crust has settled, some portions have been lowered thousands of feet farther than others, and in these great depressions the waters have collected, forming the *oceans*, which in places are four or five miles deep.

Those great portions of earth's crust which rise above the ocean are called *continents*; and the highest mountain

peak upon them is fully eleven miles above the deepest part of the ocean.

Change in the Level of the Land. — The contracting of the earth has caused many changes, and is still causing many. Some parts of the land have risen out of the ocean, and other parts have sunk beneath it. Perhaps the place where you live, even though it be among the mountains, was once below the ocean. This can be proved, in some places, by finding certain shells, called *fossils*, in the rocks.

Ages ago these shells were parts of animals living in the ocean; but on the death of their owners they became buried in the mud and lay there for many centuries until the layers of mud became slowly hardened into rock. This was later lifted above the water, and then frost, rain, and rivers wore the upper layers away, bringing the fossils to light.

We have already seen (*Our Home*, p. 2) how rock is changing to soil and being washed from the land into the ocean. We now learn that this settles upon the ocean bottom, hardens into rock, and then, perhaps, is lifted into the air. These changes are very slow, but they are going on all the time. Places once inhabited by men are now beneath the sea, and others where they now live have risen above it.

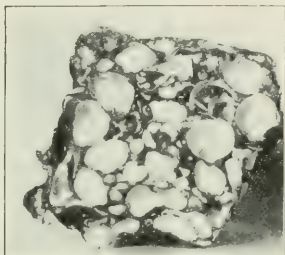


FIG. 13.

A rock containing many fossil shells.

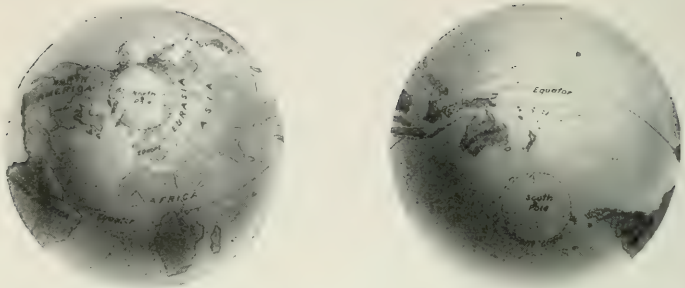
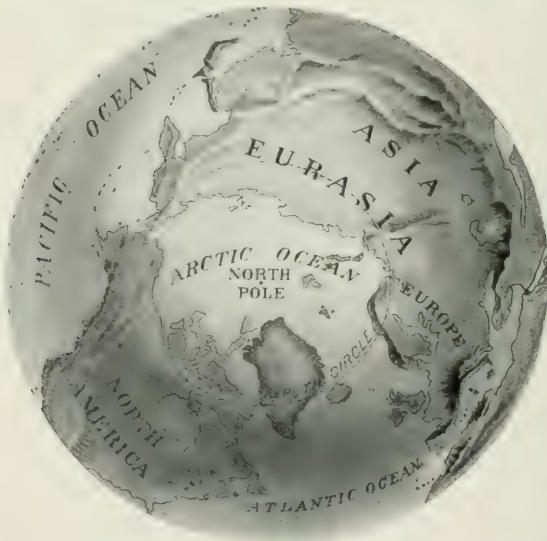


FIG. 14. — Land (on left-hand side) and water (on right-hand side) hemispheres. *Hemisphere* means half-sphere; that is, half the earth.

V. THE CONTINENTS AND OCEANS

Land and Water. — The greater part of the land is found in the northern hemisphere, the greater part of the

water in the southern (Figs. 15 and 21).



It is possible to divide the earth into halves, in one of which — the *land hemisphere* — nearly all the land is situated, while in the other — the *water hemisphere* — there is very little land. This is shown in Figure 14.

FIG. 15. — The northern hemisphere, showing the land about the north pole, Eurasia in the eastern hemisphere, and America in the western.

THE CONTINENTS

In Figure 15, or, better, on a globe, notice that two great masses of land extend from the north polar zone. One of these lies in the western hemisphere, and is the land on which we live; the other is in the eastern hemisphere.

North America.—The western land, which is better shown in Figure 16, is broad near the north pole, and tapers nearly to a point just north of the equator, having the general form of a triangle. What is the name of this part?

Show where Ottawa, Halifax, and Victoria should be on this map. (See the map, Fig. 30.) Point also to your home. Find some rivers, mountains, peninsulas, gulfs, and other forms of land and water.



FIG. 16.

The half of the sphere containing the New World.

South America.
—South of North

America, and connected with it by a long neck of land, the Isthmus of Panama, lies the continent of *South America*. The two continents are called the two Americas, forming the New World which Columbus discovered (p. 2). Notice how much alike they are in shape; draw triangles to show this.

Through what zones does North America extend? (See Fig. 7, p. 8.) South America? Point to the places where there is snow all the time; to the part where there is never any snow. Where must the Eskimo girl, Agoonack, in the story of the Seven Little Sisters, have lived? Read about the Eskimos on page 10.

Tell how the climate would change if you were to travel from the northern end of North America to the southern end of South America. What changes would you expect to find in the plants? In the clothing of people? Write a story about such a journey.

On the opposite page are pictures of some of the wild animals of South America (Fig. 18). What wild animals live in North America? Collect pictures of them (Fig. 110, etc.). Have you ever seen any of them?

Eurasia. — East of us, across the Atlantic Ocean, is the Old World (Figs. 17 and 22). More land is found there

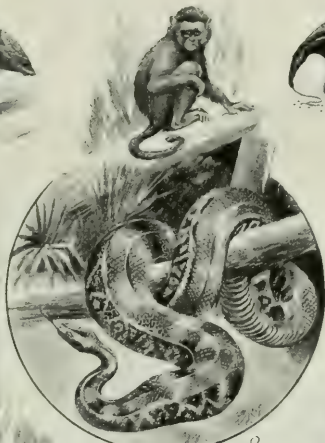


FIG. 17. — A hemisphere' showing a part of Eurasia and Africa.

MONKEY



ARMADILLO



ANT-EATER



BOA CONSTRICTOR



ALLIGATOR



JAGUAR



TAPIR



LLAMA



CONDOR

FIG. 18.

Some of the animals of South America.

than in the New World, and the largest mass of it is sometimes called *Eurasia*.

The northern part of Eurasia is in the North Frigid zone, on the opposite side of the north pole from North America (Fig. 15), and extends a great distance east and west. Find for yourself how far south this continent reaches, and through what zones it passes.

Long ago, before Columbus made his voyage to the New World, the most civilized people lived in *Europe*, the western part of this great continent.

The homes of Jeannette and Louise, two of the Seven Little Sisters, were in that country. If you have read the story, can you not tell some things about each of them?



FIG. 19.

The home of Jeannette among the Swiss mountains.
Find other pictures of these mountains in *Our Home*, pages 17 and 22.

The eastern part of the continent is called *Asia*.

Read in the "Seven Little Sisters" about Gemila, the child of the desert, and of Pen-se, the Chinese girl, whose homes were in Asia.

Europe is usually considered one continent and Asia another, although, as you

can see from the maps, especially Figure 15, they are not

so clearly separated as the other continents are. For this reason Europe and Asia are often called one continent, Eurasia, the name being made up of "Eur," from Europe, and "Asia."

Point toward this continent. Walk toward it. Which is probably its warmest part?

Africa. — South of Europe is the continent of Africa.

Here lived the little dark girl, Manenko, one of the Seven Little Sisters, and this is the place the negroes came from.



FIG. 20.

The tiger, one of the wild animals of Africa and Asia.

In what zones does Africa lie? How does it compare with South America in temperature? In shape? In what direction would you start in order to go directly to Africa?

Australia. — South of Asia are many large islands called the East India Islands (Fig. 30). Find the zone in which they lie. Southeast of these is a large island known as the continent of *Australia* (Fig. 29). In what zones is it?

THE OCEANS

The Arctic and Antarctic. — There seems to be a great deal of land; but, as we have learned (Our Home, p. 60), three-fourths of the earth is covered by ocean water. The water around the north pole (Fig. 15) is called the *Arctic Ocean*. Find it on a globe.

There are many islands in this ocean, and the water between them is covered with ice. The climate is so cold that there are very few people, and no crops of any kind can be grown. Here the Eskimos live hunting the polar bear, seal, and walrus to obtain meat for food, fur for clothing, and oil for fuel and light (see p. 102).

Much less is known about the *Antarctic Ocean* (Fig. 21), which surrounds the south pole, and on which there is also a great deal of floating ice.

The Atlantic. — Extending from the Arctic to the Antarctic is the *Atlantic Ocean* (Fig. 22), having the Old World on the east and the New World on the west. This is the water that we cross in going to Europe, and many of the things we eat and wear are brought across it. Can you name some of them? Find what continents the Atlantic borders.

The Pacific. — The water west of North America is called the *Pacific Ocean* (Fig. 23), which is the largest of all oceans, covering more than one-third of the earth's surface. What continents does it bathe? Walk toward it.

The Indian. — There is still another great body of water called the *Indian Ocean* (Fig. 17). It lies south of India in Asia, and between Africa on one side and Australia and the East Indies on the other.

The Ocean Bottom. — The depth of the ocean water varies considerably; on the average it is a little over two



FIG. 21.

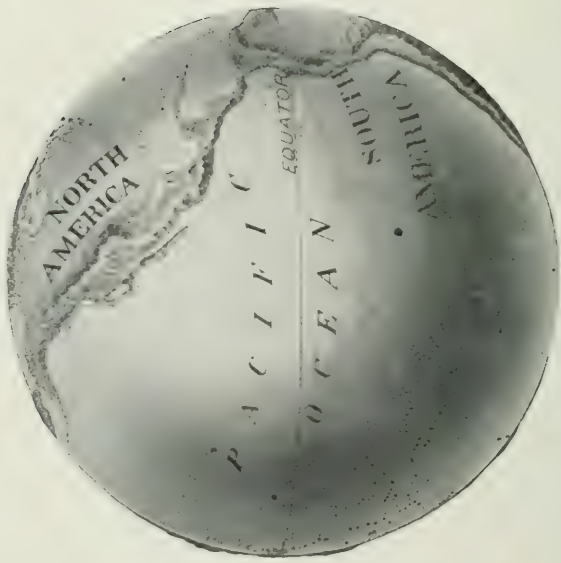
The southern hemisphere, showing the water surrounding the south pole. Notice that the Antarctic is not separated by land from the other oceans.



FIG. 22.

The Atlantic Ocean.

NORTH POLE

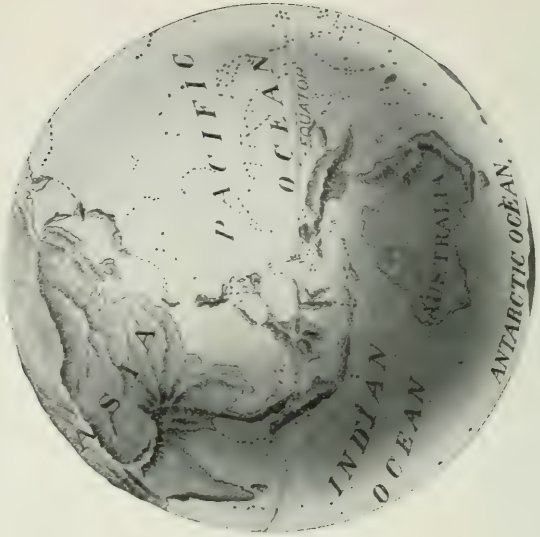


SOUTH POLE

FIG. 23.

The eastern part of the Pacific Ocean.

NORTH POLE



SOUTH POLE

FIG. 24.

A part of the globe. What continents and oceans are shown?

miles, but in some places it is more than five miles deep. In this immense body of water are millions of animals, some of them, as the whale, shark, codfish, and seal, being of use to man.

The bed of the ocean is mainly a great plain, where it is as dark as our darkest night, because the sunlight cannot pass through so much water. In consequence, the fish living there have little use for eyes, and some have none.



FIG. 25.

One of the deep-sea fish.

The mud which covers the bottom is in many places made up of the shells of tiny animals, many of them even smaller than a pinhead. Some of the chalk used in schools was just such mud before it was raised to form rock layers on the dry land.

Mountains in the Oceans. — While most of the bottom of the sea is a plain, some parts are not so level. Here and there are mountain peaks, and chains of islands, extending above the sea far away from the continents. Many of these are portions of mountain chains rising above the water; but many, like the Hawaiian Islands, are volcanoes which have been built up by lava



FIG. 26.

A piece of coral, with the polyps projecting from the hard coral like a bunch of flowers. See also Fig. 237.

flowing from the interior of the earth (p. 13).

Coral Islands. — In the open ocean there is another interesting kind of island known as the *coral island* (Figs.



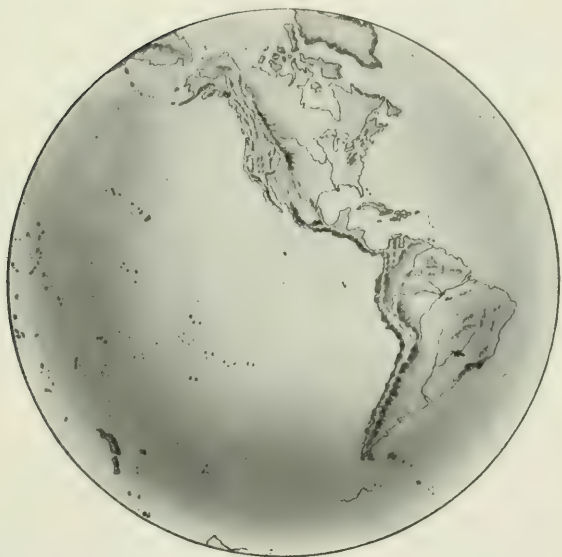
FIG. 27.

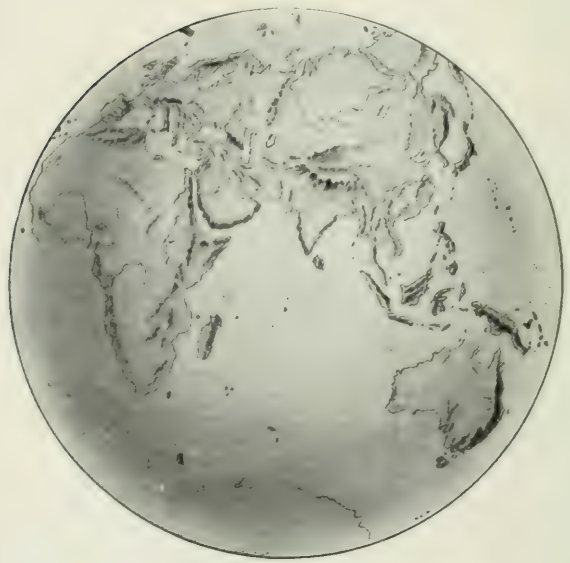
A ring-like coral island, called an *atoll*, in the open ocean.

27 and 237). Some very tiny creatures, called *coral polyps*, build hard, limy coral, such as you have no doubt seen. Where the ocean water is warm, as in the torrid zone, these little animals live in immense numbers, millions of them around a single island.

Each polyp resembles a fully blossomed flower; and they vary greatly in color, being white, pink, purple, red, yellow, brown, and many other colors. It is a truly beautiful sight to see them spread out in the water, looking like a flower garden in the sea (Fig. 26).

When these coral animals die, the hard coral part remains. Then other polyps build upon these skeletons, and this is continued until the surface of the water is reached and coral islands are formed.





THE WORLD ON MERCATOR'S PROJECTION.

0 1000 2000 3000 4000 5000
 Scale of Miles along the Equator.



VI. MAPS

THE maps that have been thus far used represent hemispheres, and show the earth in relief, as it would appear if we looked down upon it from above. Such maps are especially desirable because they call attention to the roundness of the earth ; but they are so difficult to make that it is customary to represent the earth on flat maps instead.

In Figures 28 and 29 you can see the difference between the two. While the lower ones, by the shading, show the roundness of the earth, the upper two represent it as quite flat. Although they are unlike, the latter show the position of the land and the water quite as plainly as the former. Since this is true, and since it is much easier to make the flat maps, these will be the ones chiefly used hereafter in this book. But in studying flat maps one should always remember to think of the earth as round, and not as a flat surface.¹ Examine Figure 30 also.²

¹ The teacher should see that this is done by frequent use of a globe. It is advisable to have one large globe and several small ones, so that each pupil may have one for frequent use.

² These maps (Figs. 28, 29, and 30) should be carefully studied, the pupil following map questions given by the teacher to cover form, location, etc., of continents, oceans, and important places.

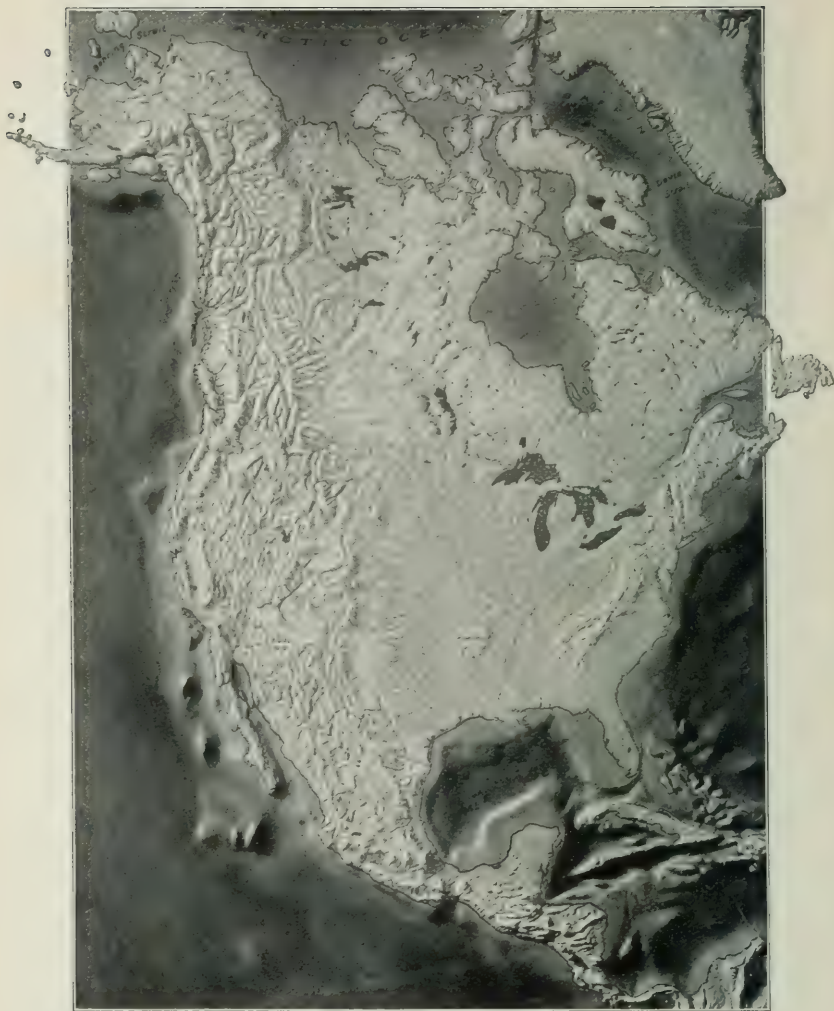


FIG. 32.
Relief map of North America.
(Modelled by E. E. Howell.)



VII. NORTH AMERICA

Physical Geography. -- Here is a relief map of the continent on which we live. What great highland do you find in the west? In the east? In what direction does each extend? Which is the broader and higher? Where is the lowest land between these two highlands? Trace the St. Lawrence River and Great Lakes; the Mississippi River. Name some of the largest tributaries of the Mississippi River. (You will find these names on the map, Fig. 31.) Find the Rio Grande River in the south; the Mackenzie and the Yukon in the northwest. What two great rivers flow westward from the Rocky Mountains to the Pacific Ocean?

Notice the slope east of the Appalachian Mountains. Is it longer or shorter than that west of the Rockies? What, then, are the main slopes in North America? Upon which of these slopes do you live? Point as nearly as you can to the place where your home is.



Section from Vancouver I. to Anticosti I. to show comparatively the extent of level and highest lands.

FIG. 33.

Find Halifax and Victoria on Figure 31. If you were to go westward from the former to the latter, you would travel over many hills, valleys, and mountains. Some of the slopes would be short and gen-

tle; others would be very long, and sometimes gentle, sometimes steep. Here is a drawing showing the chief slopes you would cross in making that journey. Trace on the map the various slopes of the drawing. Draw a section like this.

Political Divisions. — You will remember that Spain was the nation that helped Columbus to make his discovery of America. The Spaniards afterwards settled in the southern part of the continent, and introduced the Spanish language there. This is still the chief language spoken in MEXICO and in the southern part of North America. Mexico became independent of Spain many years ago.

Other nations also sent out explorers and made settlements. Among them were the British and French, who settled chiefly along the Atlantic coast, the French occupying the northern part of the country, and the British the central portion between the French and the Spaniards. In course of time the British came to own the whole of the continent north of Mexico.

Many of the British in the central portion of eastern North America became dissatisfied with the manner of their government by the mother country. On the fourth of July, 1776, they declared their independence of Great Britain, and after a severe struggle they won it completely. This part became known as the UNITED STATES OF NORTH AMERICA. Britain, however, still retained the northern part of the continent, then, as now, called CANADA, in which we have our homes. Find each of these countries in the map. (Fig. 31.)

Besides these three large nations, several smaller ones occupy CENTRAL AMERICA, which lies south of Mexico.

Of course there must be some place where one country ends and another begins. Such a place is called a *boundary*, and the boundary

lines between the different nations are shown on this map by heavy lines. Point them out.

In some parts you see that a *natural boundary* has been chosen, such as a river or a chain of lakes; but it is often only a straight line, cutting across rivers, lakes, and mountains. Examine the boundary of the Dominion to determine how much of it is natural.

Where the boundary is only a straight line, it is marked by a row of posts or stone pillars a few rods apart, and if you were to cross from one country to another you might easily see them.

VIII. THE DOMINION OF CANADA

MAP QUESTIONS. — (1) What part of North America does Canada occupy? (2) What waters border Canada? (3) What country and in which direction? (4) What land is northwest of Canada? (5) What land northeast? (6) What is the greatest distance across the country from east to west? (Notice the scale of miles on the map.) From south to north? (7) What forms the great central basin? (8) The great southern basin? (9) What great divide is in the west? (10) What two great rivers show the northern slope and the southern basin between the Rocky Mountains and Hudson Bay? (11) What climate might you expect in the northern part? (12) Find Ottawa, Montreal, Toronto, Quebec, St. John, Halifax, Winnipeg, Victoria, Regina, and state where each is.



FIG. 35.

The old Jesuit Mission Chapel, built by the French at Tadoussac, at the mouth of the Saguenay River in 1746.

You have already learnt (Our Home, p. 92) how the whole of the American Continent was peopled originally by the Indians, and how various European nations crossed the Atlantic Ocean, and took possession of the land, sometimes with the consent of the Indians, but more often against their will. You have also learnt how the northern part of North America was discovered nearly 400 years ago by



Frenchmen, under Jacques Cartier, and called Canada, and how settlements were made chiefly on the sea-coast and on the shores of the St. Lawrence River.



FIG. 36.

A general view of Quebec, from Point Lévis, in 1753.

From there the early French pioneers extended their missions far away to the west by the Ottawa River and the Great Lakes, and explored the Mississippi River to its mouth in the Gulf of Mexico. Trace their course on the map (Fig. 31).

South of the Great Lakes the country had been



FIG. 37.

View of Cataraqui (Kingston), showing the remains of old Fort Frontenac, in 1783.

taken possession of by the British, and between them and the French fierce rivalry and warfare continued up to about 140 years ago, when Canada was given up by France to Great Britain.

The whole white population at that time (1763) was not over 70,000, and these were grouped mainly on the banks of the St. Lawrence River, or at a few points on the sea-coast or on the Great Lakes, near some fortified post, where

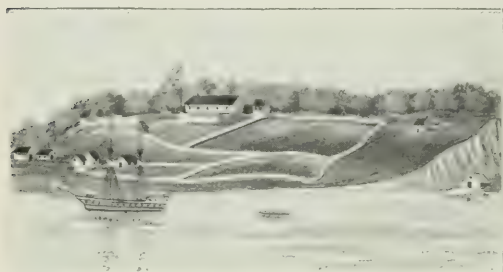


FIG. 38.

View of Fort George, at the mouth of the Niagara River,
1812.

they could defend themselves against the attacks of the Indians. A few years afterwards this population was increased by a large number of refugees from the United

States, who preferred to sacrifice their property and remain under British authority rather than join with the rebels, as the founders of the United States were then called.

Canada was not then the great country it is now. Under the French rule, that part of the country bordering on the St. Lawrence River and north of the Great Lakes, was called Canada, and that part east of the Notre Dame Mountains and south of the Bay of Chaleurs and Gulf of St. Lawrence, bordering on the Atlantic Ocean, was called Acadie or Acadia. See on the map (Fig. 34) what a comparatively small part of the Dominion of Canada this now forms. In fact, the whole of the present vast country

of Canada was practically in the possession of the Indians ; and although many daring explorers had travelled far west in search of a route to India, neither they nor the adventurous fur-traders had ever reached as far as the Rocky Mountains. Now, we may travel from ocean to ocean in a luxurious carriage on the Canadian Pacific Railway, whereas it is only a little more than a hundred years ago (1793) since Sir Alexander Mackenzie made the first entire journey from ocean to ocean, across the prairies, and over the Rocky Mountains, through a country inhabited by warlike tribes of Indians.

Let us see how this change has come about, from the Canada of one hundred years ago to the Canada of to-day, and how from small beginnings such great results have been developed. In order the more easily to study the subject it is better to review the whole and then to take up each section of the country separately.

When Acadia and, later on, Canada were given up by France, both of these countries became Provinces of Great Britain, and each had its own separate government. Acadia was named Nova Scotia by the British, but Canada retained its original name. After a time, Canada was divided into Upper and Lower Canada, and Acadia into Nova Scotia and New Brunswick. The islands of St. Jean or St. John (Prince Edward Island) and Isle Royale (Cape Breton), which had not been included in the cession of Acadia, were given up to Great Britain at a later date, and became separate Provinces. Cape Breton was finally made part of Nova Scotia, but Prince Edward Island has continued to be a separate Province.

This was the position of the country when in the year 1867 the Dominion of Canada was formed, comprising at

first Ontario (Upper Canada), Quebec (Lower Canada), New Brunswick, and Nova Scotia. The First of July is now annually celebrated as a public holiday in remembrance of the formation of this union. In 1871 it was joined by British Columbia, and in 1873 by Prince Edward Island.

In the year 1869 the rights of a trading company, called "The Hudson's Bay Company," in the vast territory lying north and west of the original Province of Canada, and extending to the Arctic and Pacific oceans, were purchased by the Government of the Dominion. Out of this great tract of land the Province of Manitoba was organized in 1870; and afterwards the North-West Territories, as the country was called, were divided into eight Districts and one Territory (Yukon). Name these Districts from the map and tell how they are situated. Four of these Districts, between Manitoba and Keewatin on the east and British Columbia on the west, have since been united under the name of "The North-West Territories" for partial self-government. These will probably soon be formed into a separate province. Name them from the map (Fig. 34).

Name the different Provinces and tell how they are situated.

Each of the Provinces has its own government, as explained in *Our Home*, page 122, but the Territories and unorganized Districts are under the more direct control of the Dominion Government.



**NEW BRUNSWICK,
NOVA SCOTIA
AND PRINCE EDWARD ISLAND.**

Scale of Miles
0 50 100

- Other with 25,000 to 50,000 **Halifax**
- Cities with 10,000 to 25,000 **Charlottetown**
- Cities with 5,000 to 10,000 **Fredericton**
- Smaller Places **Pictou**
- Capitals thus: *
- Other Places: •

65° West 61° from Greenwich Longitude Cape Sable Island Cape Sable I. 66° West 60° from Greenwich Longitude

IX. THE ATLANTIC PROVINCES

MAP QUESTIONS. — (1) Name the Atlantic Provinces. (2) Which is the smallest? (3) On what waters do they border? (4) What mountains are in these Provinces? (5) In what direction do they extend? (6) How is Nova Scotia connected with New Brunswick? (7) How wide is this isthmus? (See scale of miles on the map.) (8) What bay separates these two Provinces? (9) How are Prince Edward Island and Cape Breton separated from the mainland? (10) What two large rivers drain the centre and north of New Brunswick? (11) What two large islands nearly enclose the Gulf of St. Lawrence? (12) What two are in the Gulf? (13) Where would you expect to find the largest cities? (14) In what direction would you sail from Halifax to reach Great Britain? (15) What is the capital of each Province? (16) Where is it situated? (17) In what direction is Ottawa from St. John? Charlottetown from Halifax?

Acadia. — A short time after the discovery of America by Columbus (p. 2), that part of the continent now called Nova Scotia was visited by John Cabot, a navigator in the service of Henry VII. of England. No settlement, however, was made there until more than a hundred years later



FIG. 40.

View of the fort and part of the town of Annapolis in the year 1829.

(1605), when the French landed at Annapolis Basin (Fig. 40).¹ They named the country Acadie or Acadia, and it comprised all the land between the watershed of the St. Lawrence River and the Atlantic Ocean. What mountains form this watershed (see map, Fig. 57)?



FIG. 41.

Remains of the fortress of Louisburg, once one of the strongest in the world. Its walls formed a circuit of $2\frac{1}{2}$ miles, and were 36 feet high, and 40 feet thick at the base. The cost of the fortifications were \$6,000,000, an enormous sum in those days. Demolished by the British in 1760.

For about one hundred years Acadia remained in the possession of France, when it was given over to Great Britain (1713), and was thereafter called Nova Scotia.

The most important fortress in North America belonging to the French was built at Louisburg, on the island

of Cape Breton, but this was captured by the British, and now it is only a heap of ruins (Fig. 41).

Seaports. — If you examine the map, you will notice that the coast is very irregular, with many deep bays, promontories, and fine harbors. This is especially noticeable in the Island of Cape Breton, where the Bras d'Or Lake cuts the island in two, being connected with St. Peter's Bay on the south by the short St. Peter's Canal. These deep indentations have been caused by the sinking of the land, as you have learned (Our Home, p. 62). Draw the coastline showing some of these features.

¹ Whenever a city, river, etc., is mentioned in the text, the pupils should be required to locate it on the map, giving Province and position.

The excellent harbors have determined the places where the principal cities and towns should grow up, and where the terminal points of the railways should be. The largest of these are HALIFAX and ST. JOHN (Our Home, Fig. 104). Halifax is also important as being a fortified city and the chief naval station for the British fleet on the North Atlantic Ocean (Our Home, Fig. 113). Here is also a



FIG. 42.

View of H. M. Dockyard at Halifax, N.S.

very extensive imperial dockyard for repairing the great warships (Fig. 42).

A fine harbor by itself cannot make a large city. As you have already learned (Our Home, p. 63), this is important chiefly because it renders the loading and unloading of vessels easy and safe. But unless there were many people supplying and sending material to load the vessels, there would be little need for these harbors. The St. Lawrence River is closed by ice in the winter, and then Halifax and St. John become the seaports for the whole eastern part of the Dominion, as they remain open all the year round.

Fishing. — Some of the towns are situated on the coast, because many of the men who live in them are fishermen,

and must have their homes near the water. In the early days, cod, herring, mackerel, and halibut were easily



FIG. 43.

Harbor of Lunenburg, N.S., showing fleet of fishing vessels.
These are all engaged in the deep-sea fishery.

caught near the shore, but now large vessels must be used, as it is often necessary to sail far from land, the men being gone perhaps for weeks before being able to fill their

vessels with fish (Fig. 43).



FIG. 44.

Fishing boats at Summerside, P.E.I.

It is important, therefore, to have good harbors to which the fish can be brought, and where the fishing vessels can be fitted out.

YARMOUTH,
LUNENBURG,

CHATHAM, and SHEDIAC, besides HALIFAX and ST. JOHN, are important fish markets. From there fish

are sent to other parts of the Dominion, as well as to the West Indies, Europe, and the United States.

Besides the deep-sea fisheries, there are also the shore fisheries for oysters and lobsters, as well as for cod, herring, mackerel, etc. These afford employment to many men, not only in the catching, but in the canning and preparing for market as well (Figs. 44 and 45). Much salmon is also taken by gill nets in the tidal waters of the Gulf of St. Lawrence, and by rod and line in the rivers flowing into the Gulf. The latter, on that account, have become favorite resorts for the angler.

Every year many men are attracted there to enjoy the vigorous sport and healthful recreation.



FIG. 45.

Fleet of oyster boats off Caraquet, N.B., on the Bay of Chaleurs in the Gulf of St. Lawrence.

The salmon spend most of the year in salt water, but at a certain season they seek the fresh water of the rivers, swimming and leaping up the swiftest currents, in spite of rapids, to spawn or deposit their eggs, after which they return to the salt water (see Fig. 90).

During the fishing season large quantities of fresh salmon are shipped away to different parts of Canada and the United States.

Rivers. — The map will show that the rivers in Nova Scotia are all very short, and that scarcely any place is over thirty miles distant from the salt water. In New Brunswick, however, a low height of land separates the rivers flowing into the Gulf of St. Lawrence from those flowing into the Bay of Fundy. The **ST. JOHN RIVER**

system occupies the larger part of New Brunswick, and with its upper tributaries supplies the great highway for the lumberman. Along its lower course and in the valleys



FIG. 46.

Suspension Bridge over the St. John River. Notice the fall of the water into the harbor.

of its tributaries there are fertile farming lands. Trace the course of the St. John.

The St. John River, at its entrance into St. John Harbor, is compressed into a narrow channel between high rocky banks, so that the water cannot flow freely away. Here, therefore, is seen a remarkable occurrence of a double water-fall at every tide (see p. 48). At high tide in the harbor, the water there is twelve feet higher than in the river, thus creating a fall of that height from the harbor inward; and at low tide the water in the harbor is about ten feet lower than in the river, thus creating a fall outward. Can you understand this?



FIG. 47.

The valley through which the ANNAPOLIS RIVER in Nova Scotia flows is a broad Apple orchard in the Annapolis Valley, Nova Scotia

flood plain (see Fig. 48) extending north-east to the AVON RIVER, which flows into Minas Basin. It is very fertile and famed for its apple orchards (Fig. 47). Dikes have been built (Fig. 48) on the banks of both of these rivers to keep the sea-water from overflowing the land at high tide (p. 48).

Farming. — Having seen that the towns along the coast are inhabited largely by fishermen, let us see if there are many people living inland and what they do. There are



FIG. 48.

Diked lands at Grand Pré on the Avon River, the home of "Evangeline."

so many hills and mountains in Nova Scotia and in the north-western part of New Brunswick that the soil is often thin and stony, and the farms are comparatively small, supplying generally only enough products for use in the towns close by. There are, however, many fertile valleys where grain, fruit, and dairy products are abundant. Prince Edward Island is especially noted for its deep rich soil and for the farm produce it exports (Fig. 49).

Lumbering. — But if the hilly country is not favorable for farming, it is valuable for the timber with which a great part of it is covered.

During spring freshets, when the winter snows are melting and the rivers are high, the logs are floated down to a sawmill, or to a seaport where vessels can reach them. There they are shipped away as square timber, or in the shape of deals or boards, when sawn up.

SHEDIAC and CHATHAM have become important on account of being ports where timber is brought down for shipment: deals are chiefly shipped to Great Britain from ST. JOHN.

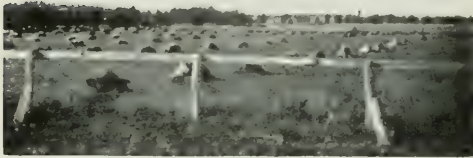


FIG. 49.

Farming scene in Prince Edward Island.

Shipbuilding.—
Timber is also

used for building ships, but not so much now as formerly, when vessels built in Nova Scotia and New Brunswick navigated every part of the world. Most of the large ships of the present time are built of iron, but the smaller vessels for the coasting trade and for fishing are still built of wood. Shipbuilding is chiefly carried on at ST.



FIG. 50.

Principal lumber regions of Canada.

JOHN, DIGBY, YARMOUTH, LUNENBURG, and WINDSOR.

Mining.—Some of the most important products of the

country are found beneath the soil, especially in Nova Scotia.

Iron. — In the first place a great amount of iron ore is found there. When dug out of the ground this often resembles reddish earth or stone, and it never looks like



FIG. 51.

The outside of a blast furnace at Sydney, Cape Breton. The round towers are the furnaces; the tall slender towers the chimneys. The ore, coal, and limestone are elevated, and then carried on cars over the tracks running to the top of the furnaces.

iron, but by putting this ore into what is called a *blast furnace* (Fig. 51), along with coal or coke and limestone, it is melted, and iron is obtained from it. The iron, when melted, sinks to the bottom of the furnace, and is run off through a vent-hole into trenches made of sand, where it forms blocks or *pigs* (Fig. 52). In this shape it is then sent away to many places to be made into rails, car-wheels, engines, pillars and beams for buildings, ships,

stoves, and a thousand other things. Steel is also made from iron, of which it is, in fact, only a harder quality.

See how long a list you can make of articles made of iron or steel.

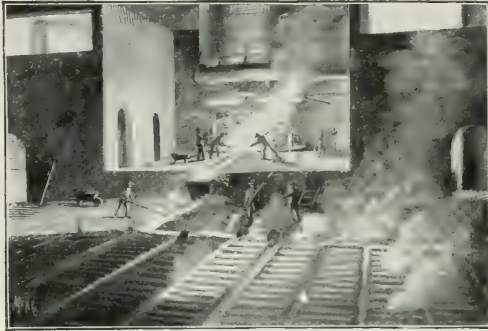


FIG. 52.

Molten iron running out of a blast furnace into trenches, where it cools to form pig iron.

Coal. — In order to make the iron ore useful to us as iron or steel, it requires an immense amount of fuel to obtain the heat necessary

to melt the ore, so that the metal may be separated from the dross or earthy, rocky matter with which it is mixed. Fortunately, great quantities of coal are found not far



FIG. 53.

View of the iron and steel works at Trenton, near New Glasgow in Nova Scotia.

from the iron mines. This is important, as it saves much expense in transporting the bulky raw material a long distance. SYDNEY, in Cape Breton, and NEW GLASGOW owe their importance to this combination, and SPRING HILL

to its coal mines. PICTOU is the shipping port of NEW GLASGOW, STELLARTON, SPRING HILL, and the neighboring coal and iron mining districts.

Much coal is needed for stoves and for furnaces in houses, and the kind used for that purpose is *hard* or *anthracite* coal, which is brought from the United States. But the coal required for smelting iron ore, and for producing steam in factories, in loco-

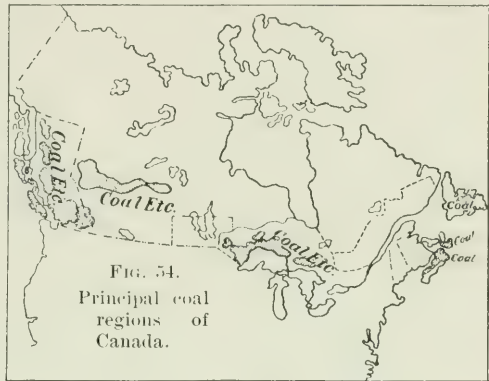


FIG. 54.
Principal coal
regions of
Canada.

motives, and on steamships is the kind found in Nova Scotia. There is, therefore, great demand for it, and there are thousands of car-loads and many ship-loads of it sent away to different parts of our own country and also to the United States. This is called *bituminous* coal.

Gold, etc. — Although iron and coal are the most important products of the mines, there is also quite a large amount of the precious metal, *gold*, found in Nova Scotia, in the rocky land near the eastern coast. *Gypsum*, from which “plaster of Paris” is made, is found near Windsor in Nova Scotia, and much of it is exported.

Tides in the Bay of Fundy. — There is one peculiarity of this part of the Dominion, which requires to be noticed — the remarkable tides in the Bay of Fundy. The water of the ocean is never at rest. For about six hours there is a constant rise, or *flow*, as it is called, and for the follow-

ing six hours there is a steady fall, or *ebb*, just like a great wave passing very slowly over the surface. Farther on, you will learn the cause of this. At the head of the Bay of Fundy are two smaller bays. Name them from the map (Fig. 39). When this great wave enters the Bay of Fundy it becomes so compressed between the shores that it rises as much as thirty feet, and when it enters the smaller bays it rises as much as sixty feet or more. It is



FIG. 55.

Tidal bore at Moncton, N.B. Here the tide rushes in at the rate of six or seven miles an hour.

the highest tide in the world, and comes in as fast as you could run, with a great swell or *bore* in front (Fig. 55), covering the muddy bottom, which had been left bare when the water receded. There you will often see vessels floating in deep water, which a few hours later will be lying on the muddy bottom far from any water. Although the tide ebbs and flows all over the ocean, the height of its rise and the rush of its current depend upon the obstacles it meets with along the shore, and other circumstances, but there are few places where it is so remarkable for its great

rise and fall as in the Bay of Fundy. In the Gulf of St. Lawrence, at the Isthmus of Chignecto, only sixteen miles across, the tide does not rise more than five feet.



FIG. 56.

The ice-breaking steamship "Stanley," crushing her way over Northumberland Strait, between Pointe du Chêne, N.B., and Charlottetown, P.E.I.

W. H. Kerley

X. PROVINCES OF THE ST. LAWRENCE RIVER SYSTEM

MAP QUESTIONS. — (1) What Provinces are comprised in the basin of the St. Lawrence River system? (2) What river forms the principal dividing line between the two Provinces? (3) What rivers divide them from the Territories on the north? (4) Into what bay do these rivers flow? (5) Name the Great Lakes bordering Ontario on the south. (6) From what country do these separate Canada? (7) Which of the Great Lakes does not border on Canada? (8) What Province adjoins Ontario on the west? (9) What plateau forms the height of land in the north? (10) What great basin is north of this? (11) What mountains form the watershed in the south-east? (12) From what country and province do they separate Quebec? (13) How is the Province of Quebec separated from Newfoundland? (14) How far is it from Montreal to the Strait of Belle Isle? (15) Name some of the rivers flowing into the St. Lawrence. (16) In what direction do they flow? (17) Where are Ottawa, Toronto, Montreal, and Quebec situated? (18) Name some of the other principal towns and tell where they are situated.

Relief. — Ontario, as you see, occupies only the northern side of the hollow through which the waters of the Great Lakes and St. Lawrence River flow; Quebec occupies both sides of this hollow. Each extends a little beyond the height of land on the north side to the valleys through which the Albany River, in the west, and the East Main River, in the east, flow into James Bay. As a natural consequence of being thus situated in a hollow or basin, all the rivers flow towards the centre from the highlands on each side. The distance they have to run is short com-

1875





ONTARIO AND QUEBEC.

Scale of Miles.



- Cities with over 100,000 Montreal
- Cities with 25,000 to 100,000 Ottawa
- Cities with 10,000 to 25,000 Belleville
- Smaller Places Collingwood
- Capitals with less than 10,000 Fredericton

Capital of Country thus:
 Capitals of Provinces thus:
 Other Places thus:
 Railroads:

M.N. ENG.

pared with the height of the land in which they have their sources, and their courses are, therefore, interrupted by



FIG. 58.

Steamship " Alberta " entering the harbor at Fort William from Lake Superior. falls and rapids which prevent continuous navigation for any great distance.

Let us now start from the highest point in this great

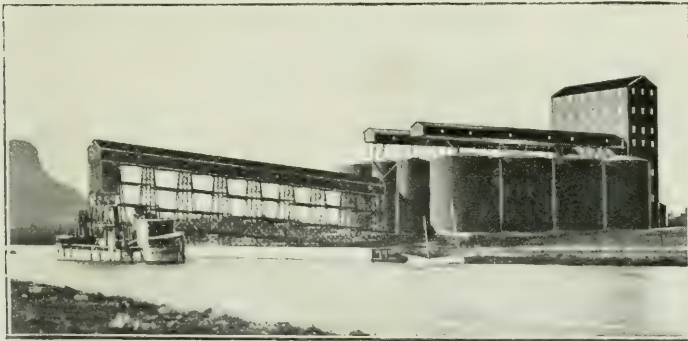


FIG. 59.

Canadian Pacific Railway tank elevators. View from East Fort William.

valley and follow the current of the waters to the ocean. In what direction should we face to begin our journey?



FIG. 60.

In the Sultana gold mine, Lake of the Woods District.

In front of us is Lake Superior, the largest of the Great Lakes, and immediately behind us are many small lakes,

the largest being the LAKE OF THE WOODS. Into what do the waters of these lakes flow?

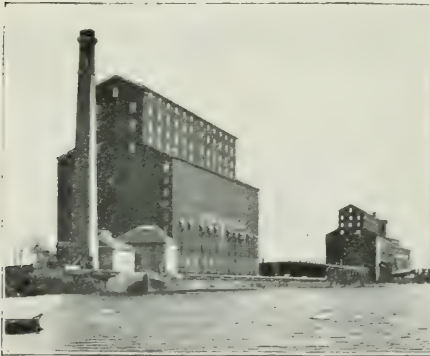


FIG. 61.

Grain elevators at Fort William.

Mining.—The district in which we stand is called the Rainy River District, and here is the chief *Gold Mining* industry of Ontario with RAT PORTAGE at the Lake of the

Woods, as the centre. Passing down the Kaministiquia River we come to FORT WILLIAM. This is an important shipping point for the grain brought from Manitoba and the North-west. Note the great elevators for receiving and shipping it (Figs. 59 and 61). Near there is PORT ARTHUR, ON



Thunder Bay. We now take the Canadian Pacific Railway steamer (Fig. 58) along the north shore of Lake Superior, to MICHIGICOTEN, in the neighborhood of which *gold* and

iron are found. Thence, through the St. Mary River and Canal (Fig. 63) into Lake Huron, and along the north shore to the Georgian Bay. North of this is SUDBURY, the centre of valuable *nickel* and *copper* mines. What islands do we pass on the way?



FIG. 63. Steamship entering the lock of the Sault Ste. Marie Canal.

Lumbering.—It may be noticed that along the north shore of these lakes there are few towns, as the land is rocky and barren. It is, however, valuable for its forests from which immense quantities of lumber, chiefly pine, are cut every year, affording employment to many saw-mills, usually situated near the mouths of the rivers, as



FIG. 64.

Spruce pulp wood for the Sault Ste. Marie pulp mill, piled on the ice at the Thessalon River, Lake Huron.

at ALGOMA MILLS, FRENCH RIVER, SPANISH RIVER, PARRY SOUND, and other places.

Throughout the whole of this great tract and north to James Bay, vast quantities of spruce and other trees are found, which are cut down to be ground into pulp for making paper (Fig. 64): for this purpose large mills have been built at Sault Ste. Marie (Our Home, Fig. 103).

Algonquin National Park. — Between the Georgian Bay and the Ottawa River and south-east of Lake Nipissing, a large tract of land, more than forty miles square, has been set apart as a home for the wild animals of Canada, where the moose and other deer can be safe from reckless hunters, and the land may remain in its natural beauty with



FIG. 65.

Scene in the Algonquin Park, showing trees cut down by beavers. Note the size of these trees.

its wild inhabitants. Of this, more than one-tenth part consists of numerous small rivers and lakes, where the beaver may build his dams and the wild fowl flock in peace. How long would it take you to walk across this park?

You will observe, by looking at the map, that here a number of rivers have their sources and flow in various

directions, thus showing that it is a central height of land, and it is in fact 2,000 feet above the level of the sea.

Lake Fisheries.— While we have been coasting along



FIG. 66.

A catch of whitefish on Lake Superior.

the north shore and noting the industries of the mine and of the forest, we must not overlook that of the lake. Lakes Superior and Huron supply great quantities of whitefish and salmon-trout,

which are shipped away to all parts of the Provinces, fresh, packed in ice, or salted in barrels, chiefly from SAULT STE. MARIE or from KILLARNEY on Lake Huron.



FIG. 67.

View of the Midland Furnace, No. 1, belonging to the Canada Iron Furnace Company, showing dock, ore piles, etc.

Our steamship has now brought us to the harbor of OWEN SOUND or of COLLINGWOOD, and on the way we passed a steamer and barge carrying iron ore from Michipicoten to Collingwood, or to MIDLAND (Fig. 67), also on the Georgian Bay, to supply the smelting works there.

Islands of the Georgian Bay.—

Along the coast of the Georgian Bay you will notice innumerable islands,



FIG. 68.

View near Sans Souci, among the 30,000 islands of the Georgian Bay.

forming scenery of great beauty. From the Georgian Bay north-east to the Ottawa River and south-east to Lake Ontario, there is a constant succession of hills, lakes studded with islands, and streams with rapids and waterfalls; a region nowhere surpassed for its scenery, and the resort of thousands of persons for recreation, health, and sport.

Farming.— Travelling south to TORONTO, the capital of the Province of Ontario, we enter the splendid farming district of the Ontario Peninsula, where the fertile rolling land is especially suited for the cultivation of wheat and other grain, and for raising cattle, sheep, and horses. In the centre of this country is GUELPH, where there is an Agricultural College and Model Farm for the training of

young men in the practical work of successful farming, and of preparing dairy products. Butter and cheese

making form one of the most important industries of Canada (Fig. 69).



FIG. 69.

Making butter at the Model Farm, Guelph, Ont.

A well-settled farming country naturally leads to the building up of flourishing cities and towns, and accordingly we find many of these, such as

LONDON, CHATHAM, ST. THOMAS, STRATFORD, and BRANTFORD. Name some other towns in the peninsula.



FIG. 70.

Salt works at Goderich, Ont.

Petroleum and Salt.— In this peninsula, near GODERICH, and at WINDSOR, there are wells where *salt* is found in the shape of brine (Fig. 70), which is pumped up into pans. There, the water is evaporated from it, leaving the pure salt at the bottom of the pans. Farther south, and near the point of the peninsula, in the neighborhood of PETROLEA, many wells have been sunk deep into the ground, and from these *petroleum* or coal oil is pumped (Fig. 71). This comes out at first black in



FIG. 71.

Scene at Petrolea, showing oil tanks and derricks used in boring for oil.

color, and requires to be refined, when it becomes the clear oil used for burning in lamps.

Lake Navigation.— You have learnt how Canada is separated from the United States by the Great Lakes and their connecting rivers. On these there are many vessels carrying passengers and cargoes to ports in Canada, and there are also many more belonging to the United States, as that country contains more people than Canada, and the cities there are larger and more numerous. Bridges across the rivers St. Clair and Detroit, between Lakes Huron and Erie, would be apt to obstruct the passage of ships, and yet the railway trains have to pass from one country to the other. The cars, therefore, are ferried

over in large steamers or pass under the river through a tunnel from Sarnia to Port Huron (Fig. 72). This tunnel is a great iron tube,



FIG. 72.

Entrance to the Grand Trunk Railway tunnel under the St. Clair River, between Point Edward in Canada and Port Huron in Michigan.

and with its approaches is nearly two miles long. Vessels coming from Lake Superior, after passing the Ste. Marie Canal, or from Lake Michigan, can sail without obstruction to the outlet of Lake Erie, the Niagara River, where the United States city of Buffalo is situated, or to PORT COLBORNE, the entrance to the Welland Canal. But the passage down the Niagara River is stopped by the great cataract of Niagara, 160 feet high (Our Home, p. 47).

At the western end of Lake Erie, you will notice a number of islands. PELEE ISLAND, the largest, belongs to Canada, but the others belong to the United States. These islands are noted for their vineyards and fine fruit.

To cross the Niagara River between Lakes Erie and Ontario there are several great bridges (Fig. 73). But the difference in the level



FIG. 73.

New single arch steel bridge of the Grand Trunk Railway, crossing the Niagara River. Note the great Falls in the distance.

of the two lakes is 327 feet. In order, therefore, that vessels may pass from one lake to the other, a canal has

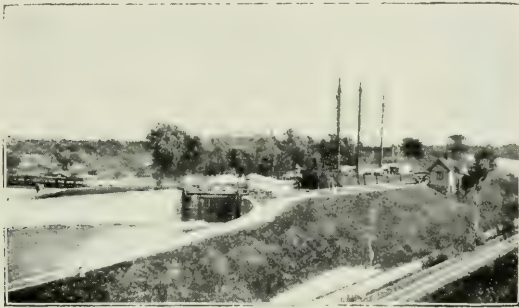


FIG. 74.

View of a steamer and barge in a lock on the Welland Canal.

been built with many locks, so that vessels are lifted or lowered gradually. This is the Welland Canal, the



FIG. 75.

View of the Union Station, Toronto.

greatest of all the Canadian canals. It is a little over 23 miles long and has 25 lift locks. St. Catharines is the principal city on the line of the Welland Canal.

Lake Ontario. — As commerce naturally comes to the most convenient place for shipping and receiving goods, so we find that **TORONTO** on Lake Ontario is the centre of commerce as well as the capital of the Province of Ontario. This is due partly to its good harbor, and partly to its central position, which makes it the meeting-point for



FIG. 76.

View in the Lake of the Thousand Islands.

a number of railways. Other cities are **HAMILTON** at the head of the lake, and **KINGSTON** at the outlet, where the lake empties into the St. Lawrence River. Besides these there are a number of towns on Lake Ontario. Name some of these.

Along the shores of Lake Ontario and for some distance inland there is a rich farming country, but the land beyond becomes rocky and is more valuable for its timber and minerals. **PETERBORO** is a central point for a number of railways, and north of **BELLEVILLE** are extensive iron mines in the neighborhood of **MADOC**. Here also gold is found, as well as other minerals, such as arsenic and lead.

St. Lawrence River.—The outlet of Lake Ontario is by several channels, expanding into the LAKE OF THE THOUSAND ISLANDS (Fig. 76), one of the most beautiful summer resorts, frequented by thousands of people for its ever varying and picturesque scenery, and for the boating and fishing to be enjoyed there. Rocky and wooded islands of all sizes extend for a distance of more than thirty miles, before the waters narrow to form one grand majestic river. Then



FIG. 77.

View of a steamer entering the Lachine Rapids, above Montreal.

follows a succession of fierce rapids, with intervening lake-like expansions, until Montreal, at the head of ocean navigation, is reached.

Many steamers run the rapids on their downward trips, but to return must come through the canals which are built to enable vessels to pass round the rapids.

These rapids supply abundant water-power, and consequently many factories are built along the banks of the canals, as at CORNWALL, VALLEYFIELD, LACHINE, and other places.

MONTREAL is the largest city of Canada, and is built on an island at the confluence of the Ottawa and St. Lawrence rivers. Being at the head of navigation, the

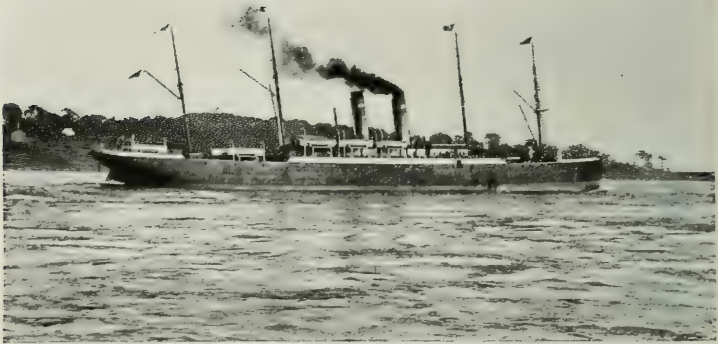


FIG. 78.

Steamship Vancouver, one of the many great steamships carrying Canadian products to Europe from Montreal in summer, and from St. John, N.B., or Portland, Maine, in winter.

highest point to which large ocean steamers can come, on account of the Lachine Rapids, it is, therefore, the point



FIG. 79.

Indian village of Caughnawaga, on the St. Lawrence River, near the Lachine Rapids.

where the greatest exchange of products, imports and exports, takes place (Our Home, Fig. 111).

You can form some idea of the importance of farm products in Canada, when you find that, beside what is required for home use, Canada exports

every year twenty million dollars worth of cheese, and over five million



FIG. 80.

View of the lumber piles at Ottawa.

dollars worth of butter, a million and a quarter dozen of eggs, and about thirteen million dollars worth of bacon. In addition to this, the exports of cattle, grain, and fruit amount to nearly forty million dollars. Try if you can reckon all this up.

Here, too, many manufactures are carried on, owing to the cheap and abundant water-power afforded by the Lachine Canal. A few miles above Montreal is CAUGHNAWAGA, the largest Indian village in Canada.



FIG. 81.

A timber-slide at Ottawa. Nearly 4,000,000 pine logs pass down these slides every year.

Ottawa River.

— This river is the largest tributary of the St. Lawrence, and forms the boundary between Ontario and Quebec as far as Lake Temiscamingue. Trace its course on the map. It is also

the most important for the lumber trade, owing to the numerous tributaries which flow into it from the great lumber district. On it is situated OTTAWA, the great centre of the lumber trade of Ontario; and on the opposite bank is HULL,

noted for its lumbermills (Fig. 80). A disastrous fire destroyed the whole of Hull and a great part of Ottawa in 1900. To enable the rafts of timber to pass the Chaudière Falls, at Ottawa, where the river pours over the rocky ledge as into a



FIG. 82.

View of the Parliament Buildings at Ottawa, taken from the Ottawa River.

great caldron, slides have been constructed on both banks (Fig. 81).

But Ottawa owes most of its importance to its being the capital of the Dominion. Here are situated the houses of Parliament, and the great government buildings, where many hundreds of persons are employed in the service of the government. Can you describe some of their work? (Our Home, p. 128.)

French Language. — You are now in the Province of Quebec, and as you have learnt (p. 32), this province belonged originally to France, and most of the people are French and retain their native language; indeed, in many



FIG. 83.

View of Quebec from Levis, showing the citadel.

parts of the province no other language is spoken. In the Dominion Houses of Parliament as well as in the Houses of Parliament for the Province of Quebec, French is spoken as well as English.

Quebec. — One hundred and eighty miles below Montreal is Quebec (Fig. 83), the capital of the province, with its citadel and many quaint old buildings; associated with stirring historical memories. On the heights above Quebec occurred the last memorable battle between the French



FIG. 84.

Loading timber at Point Levis, opposite Quebec. Note how the long sticks of timber are loaded through ports in the bows of the vessels, which are afterwards carefully secured before going to sea.

and British, when both generals Wolfe and Montcalm were killed. Here a monument is erected to their memory (Fig. 85). At Quebec a large amount of shipping is done. At LEVIS, on the opposite side of the river, the



FIG. 85.

Monument to Wolfe and Montcalm, Quebec.

greater part of the square timber brought down the St. Lawrence in rafts is loaded on sailing ships for Europe (Fig. 84). As the river is frozen up in winter, the ports of Quebec and Montreal are closed to vessels during that season.

Tributaries of the St. Lawrence. — Above Montreal the streams which flow into the St. Lawrence other than the Ottawa River are not important, but between Montreal and Quebec there are several large tributaries. Naturally these have determined the situation of the principal towns, either at the junction with the St. Lawrence, or at the falls in their courses, where the water-power is avail-

able for manufacturing purposes. Such are SOREL, THREE RIVERS, ST. HYACINTHE, SHERBROOKE, and ST. JOHN'S.

Lumbering in Eastern Quebec. — Passing beyond Quebec you will notice that there are fewer names on the map and you will judge, therefore, that the country is less settled, and this is the case. Lumbering and fishing form

the principal occupations of the people. On the north shore the land is bleak and barren, but produces a great deal of valuable timber, which, in the shape of logs, is floated down to the sawmills, generally situated near the mouths of rivers as at THREE RIVERS and TA-DOUSAC; or it is



FIG. 86.

Log jam on the St. Maurice River.

made into pulp for making paper as at GRAND MÈRE on the St. Maurice (Fig. 87) and other places.

On the south shore the land is better fitted for cultivation, but below RIVIÈRE DU LOUP the mountains approach



FIG. 87.

View of wood pulp mill at Grand Mère on the St. Maurice River, Quebec.

so close to the shore, that settlements, chiefly of fishermen, are only to be found in the coves formed by the valleys.

Summer Resorts. — The sinking of the land which has formed a passage for the St. Lawrence River has allowed



FIG. 88.

View of Murray Bay, a summer resort on the St. Lawrence.

the salt water of the ocean to enter the hollow, so that the tide flows into the Gulf of St. Lawrence and up the river as far as **THREE RIVERS**, seventy miles above Quebec.

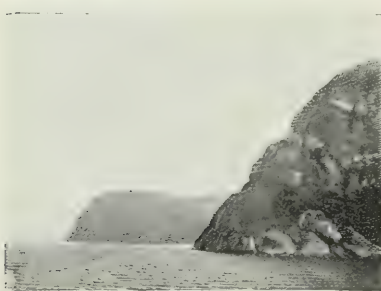


FIG. 89.

Trinity Rock and Cape Eternity, on the Saguenay River.

The water at Quebec is, therefore, salt although there is so much fresh water pouring into it; and there are several places on the river which have become favorite resorts for summer salt-water bathing, such as **MURRAY BAY** (Fig. 88), and **CACOUNA**, near *Rivière du Loup*.

The Saguenay River. — This is also a far-famed resort for tourists on account of its majestic scenery, as the river

flows through a deep gorge, where the land has sunk away to a great depth, leaving dark frowning precipices on each hand. The Saguenay and most of the rivers flowing into the St. Lawrence below Quebec, as far as Labrador and Cape Breton, are noted for salmon fishing (Fig. 90), and are frequented by many sportsmen during the season (p. 41).

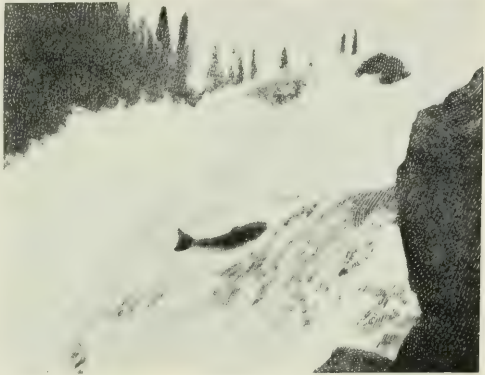


FIG. 90.
A Labrador salmon clearing an 18-foot waterfall.



FIG. 91.
On the beach at Percé, Que. Note the peculiar wearing away of the Percé Rock.

Gulf of St. Lawrence. — Passing from the great river, which increases in extent till it is about fifty miles wide,



FIG. 92.

Scene on the Labrador coast, curing fish in summer.

the Gulf of St. Lawrence is reached, famous as one of the greatest fishing grounds in the world. Here cod, haddock,

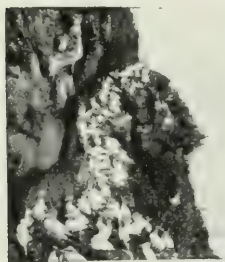


FIG. 93.

View on the Bird Rocks, near the entrance to the Gulf of St. Lawrence. Note the numerous gannets, sea-fowl which nest there and live on fish.

halibut, herring, and mackerel are caught in enormous quantities. About 20,000 persons are employed in catching and canning lobsters alone, of which more than 10,000,000 cans are put up every year, besides those shipped fresh to all parts of Canada and to the United States. You have seen cans of lobster in the grocery stores; how long would it take to count ten millions of them?

The extreme eastern strip of the coast of the Province

of Quebec and of the Territory of Ungava is called Labrador, and extends north from the Strait of Belle Isle to Hudson Strait. This is under the government of Newfoundland, and thousands of persons, men, women, and children, come there every summer from Newfoundland for the purpose of catching fish, which they cure, that is,



FIG. 94.

Crossing on the ice in Northumberland Strait, between Cape Tormentine, N.B., and Cape Traverse, P.E.I.

salt and dry them (Fig. 92). After being cured, they are packed in bales or bundles for shipping away. You have probably seen bundles of dried salt codfish at the grocery stores. Except at that season of the year, the whole land north of the Gulf of St. Lawrence is but little inhabited save by a few Indians and Eskimos.

You will notice, opposite the mouth of the river, the large island of Anticosti. People have tried at different times to make a settlement on it, but these attempts have not hitherto been successful. This is partly owing to its desolate and lonely character, and to its dangerous,

rocky shores; and partly to its being surrounded by ice for months every year, during which time no person can either leave it or land on it. Both here and at the Magdalen Islands, fishing is carried on in the summer season.

You can now reach the Atlantic Ocean by passing north or south of the great Island of Newfoundland, which stands, like a protector, at the mouth of the Gulf. Steamships from Quebec, bound for Europe, often take the narrow northern passage by the Strait of Belle Isle, because it is the most direct course. This, however, is dangerous, owing to the frequent fogs, and to the icebergs which are brought down by the cold Labrador current from Baffin Bay (Fig. 95).



FIG. 95.

A glacier in Baffin Bay descending to the water's edge, where great masses become broken off, forming icebergs.

How far is it, measuring by the scale of miles on the map, from our starting-point at the head of Lake Superior to the Strait of Belle Isle, by the course we have followed?

MANITOBA AND NORTHWEST TERRITORIES.

Scale of Miles, 0 50 100 150 200 250 300

Cities with 10,000 to 50,000 Winnipeg
 (Cities with 5,000 to 10,000) Brandon
 (Cities with 1,000 to 5,000) Regina
 Smaller Places Other Places •

Capitals thus: 9



120° 115° 110° 105° 100° 95°

Longitude West

50 55

from Greenwich

100° 95°

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XI. MANITOBA AND THE NORTH-WEST TERRITORIES

MAP QUESTIONS.—(1) Name the four organized Districts, as shown on the map. (2) Name the five unorganized Districts (Map, Fig. 34). (3) Which border on the Province of Manitoba? (4) Which on the United States? (5) Which on Hudson Bay? (6) Which on British Columbia? (7) What mountains are in the west of these Districts? (8) Judging from the rivers, in which direction is the principal slope in the southern part? (9) How is it in the north-western part? (10) In the unorganized districts in the centre? (See Fig. 34.) (11) Name the principal rivers showing these slopes and state into what waters they flow. (12) What large lakes are in this region? (13) What is the capital of Manitoba?—Of the four organized Districts? (14) How are these capitals situated?

Extent of the Country.—You will easily see by the map (Fig. 34) how great is the extent of this central and northern country, compared with that of the older Provinces of the Dominion. Manitoba and the four organized Districts comprise as large a territory as all the eastern Provinces put together. Yet the country is still but thinly peopled, and it is for this reason that it is divided up into Districts (see p. 36).

The people in the districts outside of Manitoba, being so scattered and so few in number, are not able to provide for the necessary expense of carrying on the government of the country. This is, therefore, undertaken by the Dominion Government at Ottawa. As soon, however, as

any District becomes sufficiently populous, it is organized, as it is called, and power is given to the people to



FIG. 97.

A ploughing scene on the prairie in Manitoba.

elect members to a legislative assembly, where laws may be passed concerning local affairs. This is the

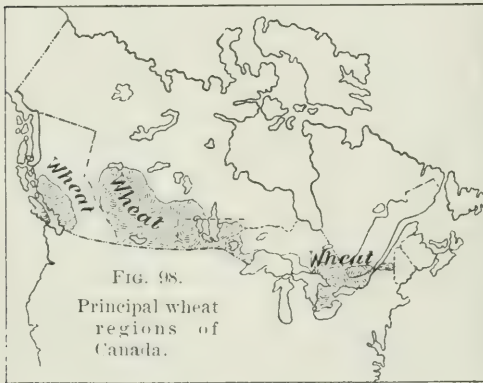


FIG. 98.
Principal wheat
regions of
Canada.

case with THE NORTH-WEST TERRITORIES, which comprise the Districts of Alberta, Assiniboia, Saskatchewan, and Athabasca. The capital of these united Districts is REGINA. In course of time

the North-West Territories will become a Province of the Dominion.

Reasons for so Few People. — As the eastern part of the Dominion was the first to be reached by immigrants coming from Europe, it was natural that the first settlements should be made there. Enterprising fur-traders, or great companies, like the Hudson's Bay Company, might penetrate into the almost unknown western country to trade for furs, of which a large value might be contained in small bulk; but of what use to farmers would this country



FIG. 99.

A reaping scene on the prairie in Manitoba.

be, no matter how fertile it might be, if they could not get their grain or cattle to market? It was necessary then, in order to open up the country, to provide means for transportation, and so the Canadian Pacific Railway was built, forming a connecting line between the Atlantic and Pacific Oceans, and affording an outlet for the products of the fertile prairies of the north-west.

Just as, in the earlier days of Canada, the first settlements were made where communication was most easy — on the coast or lake shore, or on the great rivers — so the principal towns and settlements in the north-west are found

along the line of the railway or its branches. In the same way the largest settlements are located in the eastern part of this territory, in the Province of Manitoba, because this was the first part reached. Here WINNIPEG, which thirty



FIG. 100.

Flour mill and elevator at Portage la Prairie.

years ago had a population of only 240, has now over 40,000 inhabitants, and is the main point for distributing goods throughout the whole territory. In 1870 when the Province of Manitoba was organized, the whole white population did not number more than 1000 persons. Now it is 250,000.

Farming. — What is the inducement that attracts people to Manitoba and the North-West?

This is found in the remarkable fertility of the soil, more especially in the great southern valleys. Through these the Saskatchewan, Assiniboine, and other rivers flow eastward, and the Red River northward from the United States, into the great lakes of Manitoba. What are the names of these lakes? To what other great valley or river system could you compare this in the eastern Provinces (*Our Home*, p. 45) and in the United States (*Our Home*, p. 29)?

Lake Winnipeg is very nearly as large as lake Erie, and the Manitoba Lakes are famous for their whitefish, which are shipped in

refrigerator cars to the other provinces and to the United States. SELKIRK is the chief centre for the fishing industry.



FIG. 101.

Harvesting at Indian Head, Assa., N.W.T.

As you have learnt, the richest and deepest soil is found in the river-valleys, and this is the case here. There are

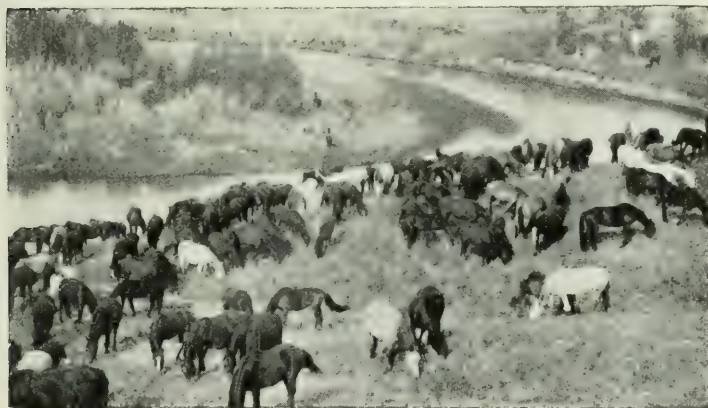
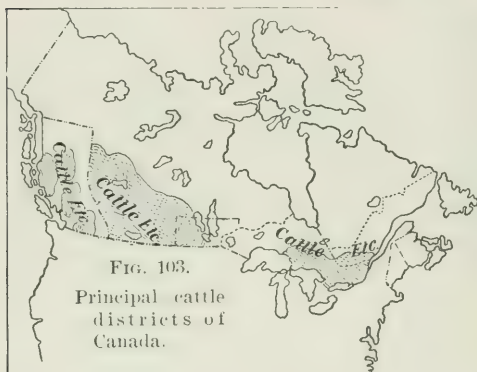


FIG. 102.

Horse-ranch on the Bow River in Alberta, N.W.T.

no forests to be cleared as in the east, for the country is all open, grassy land, called *prairie*, requiring only to be

ploughed and sown to produce an abundant crop of wheat, oats, and barley, or of potatoes and other roots. As a



natural consequence, storehouses and elevators are required to receive this produce, waiting for shipment by the railway; and many towns and villages such as BRANDON

and PORTAGE LA PRAIRIE, have sprung up as centres to which the neighboring farmers may bring their produce. Tell where some of these are situated.

Railways. — Twenty-five years ago there were no railways in Manitoba.

Now, by a glance at the map, you will see that it is covered by a perfect network of lines. These have become necessary in order to carry off the abundant crops. In August it is a marvellous sight to view the miles of golden grain extending as far as the eye can see.

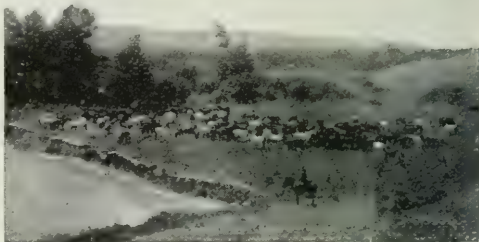


FIG. 104.
Horse round-up at Elbow River, Calgary, N.W.T.

Cattle-Ranching.—In the western part of this great southern valley, or basin, which rises almost like a succession of broad terraces to the foot of the Rocky Mountains, the climate is much drier, owing to the winds having lost most of their moisture; those from the Pacific Ocean in crossing over the Rocky Mountains, and



FIG. 105.
View of Fort Douglas, an old fort of the Hudson's Bay Company, on the Red River.

those from the east and from the Gulf of Mexico scarcely reaching so far inland. But if this is unfavorable for farming, it is excellent for raising cattle, horses, and sheep,



FIG. 106.
Cree Indians with pony and traverse.

as the prairie is covered with grass, which furnishes them with abundant food. The snowfall in winter, like the

rainfall in summer, is light also from the same causes, and the animals can find their own fodder out on the prairie all the year round, as far north as the Peace River.



FIG. 107.

The last of the old Hudson's Bay Company's Fort Garry at Winnipeg.

In southern Alberta, in order to overcome the dryness of the atmosphere, irrigation is resorted to, and LETHBRIDGE is the centre of an important irrigation system.

As a consequence of the dryness of the climate in Manitoba and the North-West Territories, the cold in winter, although severe, is not felt nearly so much at the same degree of temperature as it would be nearer the coast.

The section of land over which a man's cattle roam is not called a farm, but a *cattle-ranch* and the business is known as *ranching*. The towns which are the principal centres of the cattle industry, are CALGARY and EDMONTON. At the latter place the Hudson's Bay Company still carries on a large fur-trade.



FIG. 108.

Hudson's Bay Company. — The whole of this great

An old view of York Factory, on the Nelson River, Hudson Bay.

country, including Manitoba and the Territories, organized or unorganized, was formerly under the control of a trading company, called the Hudson's Bay Company,

which built trading-posts, which were named *factories* or sometimes *forts*, at a great many places, where it kept blankets, guns, powder, flour, provisions, and many other articles to trade with the Indians for furs. Most of these forts still remain, but as the country has become settled, fur-bearing animals have grown less numerous, and some of the forts have been abandoned. A steamship comes every year from London to York Factory on Hudson Bay, and two sailing ships to Moose Factory, to bring supplies and take back the furs. Although this is rather a dangerous voyage, it is the shortest and cheapest way to reach this distant country. From York and Moose Factories the stores are distributed all over the country by bateaux, by way of the Nelson and other rivers, and through the lakes as far as the Mackenzie River. Trace the course on the map from York Fort by the Nelson, Saskatchewan, and Mackenzie Rivers to Fort McPherson. (Map, Fig. 34.)

Indians. — The country was then inhabited by many tribes of Indians, who were generally friendly to the traders of the Hudson's Bay Company, but often hostile and treacherous to any other white men, who ventured among them, and were frequently at war with each other (Our Home, p. 94). They were, however, much more peaceable than the tribes the early settlers had to encounter in the east.

The Canadian Government has always treated the Indians justly, and great blocks of land, called "Indian Reserves," have been set apart for them in different parts of the North-West. There the Indians live, and carry on a little farming, in addition to hunting. Some of them also receive a small annual grant of money and goods from the government.

Fur-Trade. — Up to about thirty years ago, this great land was looked upon as valuable only for its fur-bearing



FIG. 109.
Some of the wild animals of Canada.

animals, which were trapped by the Indians, who brought their skins to the Hudson's Bay Company's forts for sale. It was a summer holiday for the people of Fort Garry, which is now the large city of Winnipeg, to turn out for the great buffalo hunt. They would camp out on the plains for weeks or months killing buffalo for their skins, and perhaps making a little pemmican, the hunter's food, out of the dried meat and melted fat of the animals. Now the buffalo has disappeared, except a very few that are still said to be found in their wild state near the Rocky Mountains, and a few that are kept in private herds. Naturally, as the land becomes settled, the fur-bearing animals become more scarce; but the extent of the country



FIG. 110.

View in the Rocky Mountain Park. The Bow Valley, from Upper Hot Springs, Banff, Alta.

is so great that the fur-trade is still of much importance. Some of the animals of this region are shown in Figure 109.

Rocky Mountain Park. — This is a tract of land situated in the Rocky Mountains in western Alberta (Fig. 110), which has been set apart by the Dominion Government as a national pleasure ground, where, however, no hunting is allowed. For natural beauty of scenery,—mountain, lake,



FIG. 111.

Eskimos near the mouth of Doobaunt River,
Mackenzie Territory.

and river. — it is justly noted, and it is visited every year by hundreds of travellers.

The park is 26 miles long, and 10 miles wide, and in it is situated Banff, a station and a health resort on the Canadian Pacific Railway, near the hot Sulphur Springs (Our Home, Fig. 21, p. 23). The surrounding mountains rise to a height of nearly 10,000 feet, and abound in wild game, bear, elk, caribou, and big-horn sheep.

Provisional Districts. — The Districts of **KEEWATIN**, **MACKENZIE**, and **UNGAVA** are only inhabited by a few

Indians and Eskimos, with here and there a Hudson's Bay Company's fort at long intervals. The District of FRANKLIN consists of uninhabited ice- and snow-covered islands in the Arctic Ocean.

In the southern part of these Districts there are some farming lands and valuable forests, but toward the north these give way to the "Barren Lands," the haunt of the caribou and musk-ox (Fig. 112). At the extreme north the land consists of tundra, or frozen swampy plains, bordering on the Arctic Ocean.



FIG. 112.

A herd of caribou in the Barren Lands.

XII. BRITISH COLUMBIA AND YUKON TERRITORY, THE FAR NORTH AND GREENLAND

MAP QUESTIONS (Fig. 34). — (1) In what direction do the mountains of British Columbia generally extend? (2) Name the two principal ranges. (3) What rivers flow southward between these ranges? (4) What rivers pass through the Rocky Mountains eastward? (5) Of what great river are the latter tributaries? (6) What great river has its source in the north? (7) Into what country does it flow? (8) Make a drawing of the principal mountain ranges and rivers. (9) How far is it across British Columbia (see scale on map)? (10) How far from north to south? (11) What shape has the Yukon Territory? (12) What large island forms part of British Columbia? (13) How is it separated from the mainland? (14) Compare the coast with that of Nova Scotia, and state wherein the difference lies. (15) What does the coast suggest about harbors? (16) Where are Victoria, Vancouver, New Westminster, Nanaimo and Dawson situated?

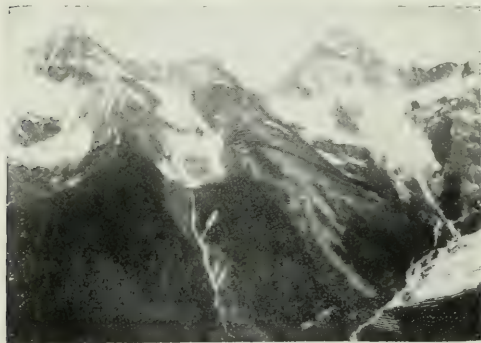


FIG. 113.

Mount Sir Donald and Eagle Peak, in the Selkirk Range of the Rocky Mountains, 10,662 feet high.

Mountains. — A glance at the map will show that this great country is apparently covered with mountains. The two principal ranges are, respectively, in the east and west (*name them*), and between them

are several shorter ranges. You can trace them by the courses of the rivers, which flow between. The mountains of British Columbia are the continuation of chains in the United States and extend to the Arctic Ocean and to Behring Sea. They are sometimes called the Western Cordilleras, a Spanish word, meaning long continuous ranges.

Some of these mountains, unlike those you have hitherto studied, are more than two miles high, and many are, for this reason, covered with snow all the year



FIG. 114.

View of the Great Glacier in the Selkirk Range of the Rocky Mountains. Note the railway station at the foot of the mountain.

round. In the high valleys between the lofty mountain peaks there are many *glaciers*, which are enormous rivers of ice of great depth. Although these glaciers may thaw to some extent under the summer sun, and thus become the sources of many mountain streams, they never seem to diminish in extent. To compare the mountains about which you have hitherto learnt with these mountains of the west, would be like comparing a little cottage to a great church.

Farming and Navigation. — You have already learnt that where there are mountains, the soil is not favorable for farming or cattle raising, and so you will generally

find it here. But there are many valleys between these mountains which are very fertile and suitable for farming. Extensive pastoral lands also are found in the interior, both in the north and south.

In the lower valley of the Fraser River and in the southern part of Vancouver Island, alluvial or flood plains have been formed, where the same fruits and grains are grown as in Southern Ontario. VERNON and KAMLOOPS in the southern interior are the principal agricultural towns. NEW WESTMINSTER, VICTORIA, and VANCOUVER are the chief markets for farm-products.



FIG. 115.

Sluicing on Bonanza Creek, Yukon Territory, showing mode of washing gravel containing particles of gold.

At this point \$8000 was taken out of a hole, 14 ft. wide by 24 ft. long.

owing to the rapids and falls; and that it is difficult to make roads, owing to the rocky, uneven land. Hence, communication is slow and full of danger. What then was the attraction that drew people to this country?

Gold Mining. — The answer is not hard to find. Both British Columbia and the Yukon Territory contain valuable deposits of *gold* and other minerals.

When gold was first discovered in the Fraser and

Thompson rivers, news of the discovery spread quickly throughout the world, and men hastened to the gold fields by thousands. At that time there was no railway across the Dominion, and the gold seekers had to travel overland through the United States, or sail round Cape Horn, or cross the Isthmus of Panama to the Pacific coast. There they would take a steamer to Victoria, then afterwards make their way to New Westminster and up the Fraser River as best they could, in small steamers or boats. Many were the hardships they had to encounter in order to reach the locality where the precious metal was to be found.



FIG. 116.

Hydraulic mining with monitors in the Cariboo District, near Quesnel Lake, B.C.

The method of mining, as it may be called, was at first, and until quite recently, what is called *placer-mining*; that is, the gold was found in the beds of rivers or streams, or in gravel beds. The miners washed the gravel or dirt in pans or sluice-boxes (Fig. 115). The gravel and earth were washed away and the bits of gold, being heavier, remained at the bottom. These sluice-boxes had pieces of wood fastened across

the bottom, against which the particles of gold were deposited.

As soon, however, as the railway was built, so that machinery could be brought into the country, the process called *hydraulic mining* was adopted (Fig. 116).



FIG. 117.

Smelter at Traill, B.C. Here gold, silver, copper, and lead are smelted.

By this plan water was brought in pipes, and directed against the face of the hills as if through a giant fire-hose, washing away the gravel and earth in the same manner as washing in the simple trough, but on a greater scale.

Later on, gold and also other minerals, silver, copper, and lead, were discovered in lodes or veins in the mountains. Then mines were dug in the mountain sides, tunnels were made and shafts sunk, and the ore, that is, the gold mixed with rock, was blasted out. After being crushed in the *stamping mill* the gold was extracted by means of mercury, which has the power of attracting the particles of gold to it. Usually, however, the ore contained the gold so finely distributed through it that it had to be taken to the *smelter*. Here it was smelted and purified from the dross, in the same manner as you have learnt about iron (p. 45). This is called *quartz mining*.

The principal mining centres are in the Kootenay Districts in the south, where ROSSLAND and NELSON are the largest towns. Minerals are, however, found in every

part of the province, both on the mainland and on Vancouver Island. Mining and prospecting are carried on in many districts.



FIG. 118.

View of Rosland, B.C., the centre of the gold mining region of British Columbia.

Coal Mining. — Still better to develop the resources of this country, vast deposits of coal have been found, both on the mainland and on Vancouver Island. The coal mines at and near NANAIMO in Vancouver Island turn out more than a million tons every year, and the extent of the mines of the CROW'S NEST PASS on the mainland is as great as any in the world.

Most of the coal used in the smelters is made into coke, as a more intense heat can be got from coke than from coal, and it is therefore better for smelting.

Coke is coal highly heated to drive off the gases, generally in ovens from which the air is almost entirely excluded. Coke will burn without flame or smoke.

Besides being useful for smelting ore, the coal mines



FIG. 119.

View of the coke ovens, at Fernie, B.C.

are valuable for supplying the wants of the railways and steamships. Great quantities are exported to the cities of the United States along the Pacific coast for this purpose.

The Canadian Pacific Railway. — When British Columbia was admitted as a province of the Dominion of Canada, one of the first things necessary was to connect it with the Eastern Provinces. This was brought about by the building of the Canadian Pacific Railway, which now extends in one continuous line from Vancouver in British Columbia to St. John in New Brunswick, a distance of 3400 miles: passing in its course through the wild gorges and

cañons (*can-yons*) of the Rocky Mountains, the fertile plains of Manitoba and the North-West Territories, the rocky scenery north of the Great Lakes, the lumbering regions of the Ottawa, the busy cultivated Eastern Townships (the district east of the St. Lawrence River), the lumbering country of New Brunswick and the lovely valley of the St. John River. Trace its course in the map, noting Vancouver, Kamloops, Revelstoke, Banff, Calgary, Medicine Hat, Moose Jaw, Regina, Winnipeg, Port Arthur, Sault Ste. Marie, Ottawa, Montreal, Sherbrooke, St. John, and state where each of these places is situated.

The natural result of the building of the railway was to increase the immigration and promote the settlement of the country through



FIG. 120.
Hauling timber in British Columbia.

which it passed. Although the railway was only completed in 1885, many thousands of persons have become settlers along the line, and many more have passed on beyond to the gold fields of the Yukon Territory. There are also many Chinese and Japanese in British Columbia, the former chiefly engaged in laundry and domestic work, the latter in the fisheries and boat-building.

Timber. — The mountains of British Columbia are not alone valuable for their wealth under the surface of the



FIG. 121.

Royal City sawmills, New Westminster. Cutting a large log.

ground, but also for that on the surface — the immense forests. The finest timber is found on Vancouver Island, along the coast of the mainland, and on the western slopes of the Rocky Mountains. There the trees grow to an enormous size, the largest several hundred feet high, and from forty to fifty feet in circumference (Fig. 121). The reason for this luxuriant growth is, that the winds from the Pacific Ocean strike there first, and the large amount of moisture they contain becomes condensed into rain, by which the growth of the trees is rendered more vigorous.

Vancouver Island. — It is only a little over a hundred years ago since Captain Vancouver surveyed the island in the name of Great Britain, and Spain relinquished all claim to it. It is now most important, because on it is

VICTORIA, the capital of British Columbia, and the British naval station in the North Pacific, holding a similar position to that of Halifax on the Atlantic. Here the steamships of the Pacific Ocean can be supplied with coal from the Vancouver Island mines, and close by is the strongly fortified town of ESQUIMALT, where are situ-



FIG. 122.

View of H.M. Dry dock at Esquimalt.

ated the British arsenal and a large dock-yard for repairing warships and other vessels (Fig. 122). NANAIMO is the principal coaling station for the British fleet, and exports large quantities of coal to San Francisco and other places in the United States.

As nearly all the vessels for ocean navigation and all the great navies of the world consist of steamships, you can see the importance of coal, and how fortunately Canada is situated with

unlimited supplies at the two extreme points, British Columbia and Nova Scotia.

Fisheries. — The waters of British Columbia also teem with the wealth of their natural product — fish. The most important of these is the salmon, and the illustration (Fig. 123) will give you some idea of the importance of the salmon fishery and of the canning industry. NEW WESTMINSTER, at the mouth of the Fraser River, is the chief centre of the fishing industry.



FIG. 123.

A single train on the Canadian Pacific Railway loaded with 374,400 cans of salmon.

Like the salmon of the St. Lawrence, these fish in British Columbia pass from the salt water to spawn in the rivers and ascend the Fraser River as far as 600 miles from its mouth. They also pass up the



FIG. 124.

The "Empress of India."

One of the Canadian Pacific Railway steamships, running to China and Japan.

Columbia River through the United States into Canadian territory. Unlike the eastern salmon, however, they come in immense shoals, the run lasting for weeks. The deep-sea fish, halibut and cod, are also very abundant and large, particularly in the vicinity of Queen Charlotte Islands.

Foreign Commerce. — As Montreal and Quebec, Halifax and St. John, are the seaports for commerce by way of the Atlantic Ocean, so VICTORIA and VANCOUVER are the seaports on the Pacific Ocean. Steamers sail from these cities to China and Japan, and to Australia and New Zealand by way of Hawaiian Islands. Trace these routes on the map (Fig. 30). They take away fish, timber, manufactures of wood and iron, and many other things; and bring back tea, silk, matting, rice, etc., besides carrying many articles for the people in the United States. They also carry much merchandise between Great Britain and other countries of Europe and the countries of the east, by way of the Canadian Pacific Railway and Atlantic steamers.

A telegraph cable is being laid to connect Vancouver Island with Australia, just as Britain is connected with Newfoundland by cable, so that before long a telegraph message can be sent entirely round the world under the ocean or over British territory.

Seal-fishing. — The fine sealskin used for caps and cloaks comes from the *fur seal* of the Pacific Ocean. These animals are taken all along the coast from San Francisco in the United States to Behring Sea in the north, and thousands of them come every spring to the Pribilof Islands (Map, Fig. 31) to rear their young. As the skins are very valuable, a considerable fleet of vessels go out to the sealing-grounds from Victoria every year and bring in usually from 30,000 to 40,000 skins.

Yukon Territory. — This territory has become famous on



FIG. 125.

Rocking on Gold Hill, Yukon Territory.

This is the simplest and most primitive way of gold seeking. Placing some of the gravel in a trough of water, it is rocked back and forth in such a way as to cause the heavier particles of gold to separate from the gravel, while the lighter materials are thrown away.



FIG. 126.

Boxes of gold awaiting shipment from Dawson City, Yukon Territory.

account of the valuable *gold mines* discovered in the KLONDIKE region, so called from the Klondike River, a tributary of the Yukon River. Although the weather there, owing to the country being so far north, is intensely cold during the greater part of the year, many people have flocked to the country in search of the precious metal.

In the year 1900 about \$25,000,000 worth of gold was taken out of this region.

The rivers are covered with ice, and the land with snow for most of the time. In addition to this, the ground is always frozen hard many feet below the surface. The miners, therefore, have great difficulties to encounter; and until lately all their supplies had to be brought by boat during the short summer, or *packed*, that is, carried by men or horses over the rough mountain passes. To accommodate the great number of people crowding to the gold fields a railway has been built nearly all the way from Skagway on the coast to Dawson.

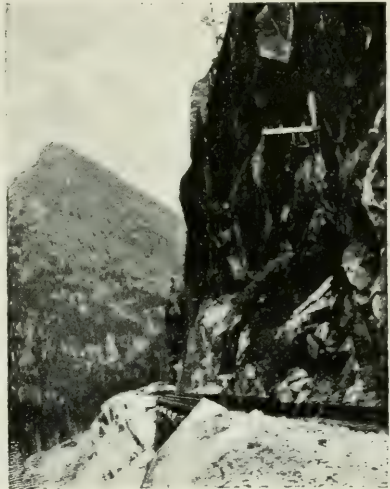


FIG. 127.

View on the railway from Skagway to Dawson City, Yukon Territory.

Dawson is the principal town and the centre of government where the Commissioner representing the Dominion Government and other officials have their residences. From here a large amount of gold is shipped by Skagway to Vancouver and Victoria, where assay offices are located.

The Far North. — In the far north is the District of FRANKLIN, where there live only a few hunters, trappers, and Indians (Fig. 34).

Along the northern coast are found scattered groups of

Eskimos, who get their living almost entirely from the sea.

Their food is obtained from the seal, walrus, polar bear, and reindeer; their clothes, summer tents, and boats are made from the skins of these animals; and their oil for light and heat during the long winter night also comes from them. Their winter houses are snow huts, and long journeys over the ice-covered seas are made on sledges drawn by wolf-like dogs.

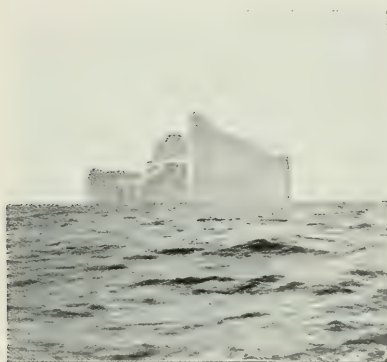


FIG. 128.

Iceberg off the coast of Labrador.

The islands and lands of Franklin District are very desolate. In winter the sea is frozen: and even in summer



FIG. 129.

A Greenland glacier entering the sea: three miles in width: showing crevasses and small icebergs.

floating ice is usually in sight. Some of the ice is that which has frozen on the surface of the sea during the winter ; but rising above this are many great blocks of ice, or *icebergs* (Fig. 128), sometimes two hundred or three hundred feet in height. They have broken off from the masses of ice, called *glaciers* (Fig. 129), that move down from the land and enter the sea.

The immense island of Greenland is almost altogether covered by such glaciers. No land can be seen excepting near the coast, where live some Eskimos and a few Europeans, called Danes, from Denmark. The island belongs to the Danes, who purchase skins, oil, etc., from the Eskimos.



FIG. 130.

A Greenland Eskimo kayak.

XIII. NEWFOUNDLAND

MAP QUESTIONS (Fig. 34).— (1) How is Newfoundland situated? (2) What strait separates it from Labrador? (3) What is the nearest land on the south-west? (4) What cape is at the south-east point? (5) What islands belonging to France are near the south-east coast? (6) What is the capital and where is it situated? (7) What part of Labrador is under the government of Newfoundland?

Newfoundland is the oldest colony of Great Britain in America. This large island, although standing at the mouth of the Gulf of St. Lawrence, does not belong to the Dominion of Canada, but forms a separate British Province.

Fisheries.— There is a cold current flowing slowly along the Labrador coast from Greenland, which brings down many icebergs from the glaciers in Baffin Bay (Figs. 128 and 129). This current strikes the north-east of Newfoundland. On the south there is a warm current which flows north along the Atlantic coast from the Gulf of Mexico, and is called the Gulf Stream. These two currents meet to the east and south of Newfoundland, and there are formed the Banks of Newfoundland, a wonderful place for cod-fishing, where many vessels for hundreds of years have come from Europe, as well as from Canada and the United States for the summer fisheries. The meeting of the warm and cold currents causes frequent fogs on the Banks.

The Banks of Newfoundland are so called, not because they appear above the surface of the ocean, but because they form a great plateau

600 miles long by 200 miles wide, rising more than two miles from the bottom of the ocean. The water covering them is from 60 to 1000 feet deep.

Seal-fishing. — In the winter and spring vast numbers of seals are found on the ice north of Newfoundland. The seal of the Atlantic is different from the seal of the Pacific



FIG. 131.

Newfoundland sealers killing seals on the floe ice off the coast of Labrador.

Ocean. The fur is of comparatively little value, and the Atlantic seal is hunted chiefly for the layer of fat or blubber, which is just beneath the skin and is useful for the manufacture of seal-oil. The Labrador seals rear their young on the fields of floating ice that drift southward in the cold Labrador current. The hunters generally go out on steamers strongly built to break their way through the ice.

ST. JOHN'S, the capital, has a fine harbor (Fig. 132), and is the principal port for the fishing fleet. It is also the nearest port to Europe, being distant from Ireland

about 1800 miles. HARBOR GRACE, BRIGUS, and TWILINGATE are important fishing towns.



FIG. 132.

View of the harbor of St. John's, Newfoundland.

Interior.—As most of the people are engaged in the fisheries, they have naturally settled along the coast,



FIG. 133.

Steamship crossing from Sydney, C.B., to Port aux Basques, Newfoundland.

chiefly on the southern and eastern shores, and the interior has been comparatively little explored. The cold Labrador current makes the north-eastern shore inhospitable. Lately, valuable mines of iron, copper, and other minerals have been found, and enterprising efforts have been made to develop the mineral resources of the country. The main railway line

crosses the interior of the island, connecting the main ports and the interior.

extends from St. John's through the mineral region in the centre of the island, 548 miles, with various branches, and is connected by steamship at Port aux Basques with Cape Breton.

Submarine telegraph cables connect Trinity Bay, north-west of St. John's, in Newfoundland, with Ireland, and a short line connects the island with Cape Breton, so that messages can be sent from Canada through Newfoundland to Europe.

Labrador. — This is a strip of the coast of the mainland, extending from the Strait of Belle Isle to Cape Chidley, and is under the jurisdiction of Newfoundland. It is valuable for its fisheries, and is inhabited chiefly in the fishing season, when the population may amount to 10,000 persons (see p. 72).

St. Pierre and Miquelon. — Near the south-east coast of Newfoundland are two small groups of islands, of which the largest are St. Pierre and Miquelon. These belong to France, and are valuable as a basis for the French cod-fishery on the Banks of Newfoundland.

XIV. THE UNITED STATES OF AMERICA

MAP QUESTIONS. — (1) What waters border the United States? (2) What countries? (3) What is the greatest distance across the United States from east to west? From north to south? (4) Where are the main divides? (5) Do you see any part that has very few streams? What does that suggest to you? (6) Find New York, Philadelphia, Boston, Portland, Baltimore, Washington, Chicago, New Orleans, St. Louis, Denver, San Francisco, and tell where each is. (7) What states border Canada?

Previous to the war for independence (p. 30) the United States of America were colonies of Great Britain. They then numbered thirteen colonies, each with its own separate government. Having gained their independence, these colonies were named States and their Union — the United States of America.

The form of government in the United States is different from that of Canada. Each State has its own government, like each province of Canada, and each State also elects representatives to Congress, which meets at Washington and legislates for the whole country, like the members of the Dominion Parliament do at Ottawa. But the heads of the government — the Governor of a State, and the President and Vice-President of the United States — are also elected by the votes of the people. How does this differ from the form in Canada?

For a long time after the war for independence, the interior of the country was, like that of Canada, an unknown wilderness, inhabited chiefly by Indians. In the south and south-west, the French and Spaniards occupied





UNITED STATES

Scale of Miles.
 0 50 100 200 300

Capitals of Countries ●
 Capitals of States ○
 Other Cities .

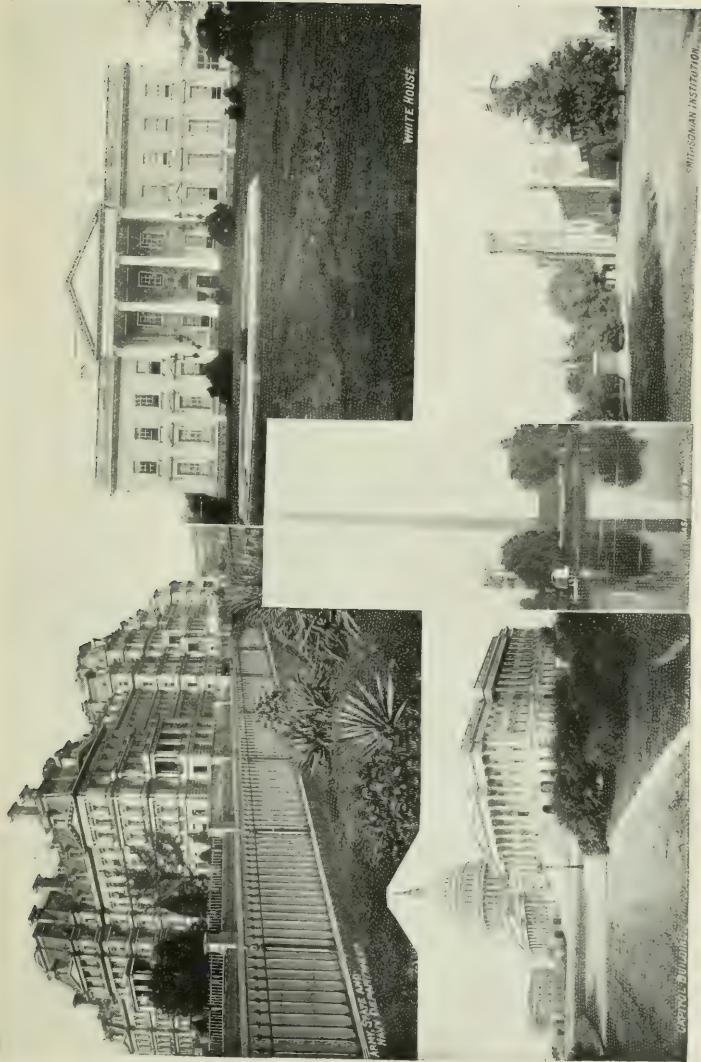


FIG. 135.

A group of government buildings at Washington. Notice how very large the Capitol is by comparing the great columns in front with those in the White House, the residence of the President.

a large territory. Part of this the United States has since obtained by war and part of it by purchase, so that the country is now several times as large as it was at first. Many large states have been added to the original thirteen, until there are now forty-five States. There are still some parts called *Territories*, which, like the Territories of Canada, have not entire self-government, and have not yet been made into States.

A hundred years ago the whole population of the United States was not more than that of the city of Greater New York (p. 112) at the present day.

As the whole northern part of the United States borders upon Canada, there is naturally much intercourse between the two countries, and we should therefore become familiar with the country, its products and its people. This we can do most readily by taking the States in groups.



92 90 86 84 Longitude 82 West 80

90 88 86 84 Longitude 82 West

M.-N. ENG.



NORTHEASTERN PART OF
UNITED STATES,
 AND ADJOINING
 PROVINCES OF CANADA.

Scale of Miles.

- Cities with over 1,000,000 New York
- Cities with over 100,000 Boston
- Cities with 25,000 to 100,000 Albany
- Capitals with less than 25,000 Dover
- Smaller Places New London
- Capitals of Countries thus:
- Capitals of States thus:
- Other Cities

from 78 Greenwich 76 74 72 70 68

from 78 Greenwich 76 74 72 70

XV. NEW YORK AND THE NEW ENGLAND STATES

MAP QUESTIONS. — (1) What State borders on New Brunswick? (2) What States on Quebec? (3) On Ontario, south and east? (4) What States are east of New York? (5) Which State is the smallest? (6) Which does not border on the ocean? (7) What is the capital of each State? (8) In what direction is New York from Montreal? (9) Buffalo from Toronto? (10) Portland from Fredericton?

Names. — The first settlers who came to the eastern part of the United States were English, and so the country east of New York State received the name of New England. New York State was first settled by the Dutch, and the city of New York was then called New Amsterdam, but this name was changed when the city was taken by the British. You will find several other names beginning with *New*, as New Hampshire and New Haven. What reason can you give for the word *New* being used so often?

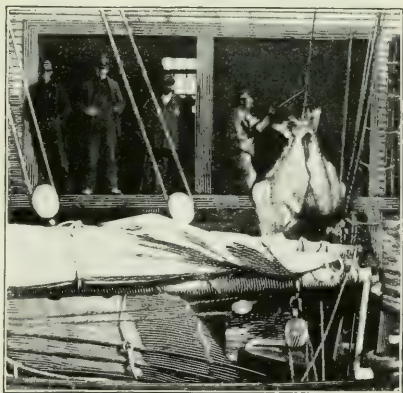


FIG. 137.

Fishermen hoisting halibut from a fishing vessel at Gloucester. Notice that these fish are as large as a man.

Seaports. — You will see by the map that the coastline resembles that of Nova Scotia, with numerous bays, promontories, and harbors. Here, too, excellent harbors have determined the places where some of the greatest cities shall grow up. Thus, on the New England coast, **PORTLAND** is the terminus of the Grand Trunk Railway of Canada, and the winter port for many Canadian steam-



FIG. 138.

Bridge between New York City and Brooklyn.

ships sailing to Europe. **BOSTON** is the largest city, and **GLOUCESTER** the principal port for fishermen (Fig. 137).

NEW YORK, owing to its splendid harbor, has become the largest city on the continent and is situated on Manhattan Island, at the mouth of the Hudson River. In **GREATER NEW YORK** is included the large city of **BROOKLYN**, on the opposite shore of the harbor. What is the cause of so many people crowding together at this point? Besides the extent and convenience of its harbor for the accommodation of shipping to and from other countries, New York possesses the best water communications with the north and west by way of the Hudson River. The Hudson River and the Erie canal from Albany to Buffalo

and the Great Lakes afford cheap transportation for the products of the West ; and Lakes George and Champlain with the Richelieu River form a cheap water way for great quantities of Canadian lumber. New York has also become the terminus of many great railway systems and is thus the receiving and distributing point for the greater part of the northern and central United States.

Lumbering. — The Notre Dame Mountains between Quebec and New Brunswick are continued into New England and New York, under the names of the White Mountains, Green Mountains, and Adirondack Mountains.

As in Canada, so here, this mountainous region is valuable for lumbering. This is carried on most extensively in Maine, where BANGOR is the chief shipping port.

Farming. — In the New England States there are so many hills and mountains that the soil is generally poor and the surface rocky. Farming, therefore, is not very productive, although nearness to large markets makes it still profitable. In New York State farming is of greater importance, as most of the state is more level and has a rich soil, producing abundant crops similar to those of western Ontario.



FIG. 139.

One of the high buildings in lower New York. How many stories has it?

Manufacturing. — There is one advantage possessed by the New England people. The rivers, being short and



FIG. 140.

Great cotton-mills on the Merrimac River at Manchester, New Hampshire.

having their sources in the highlands, as in Canada, are swift in their currents with many rapids and falls. In what way is this an advantage? You will find, for this

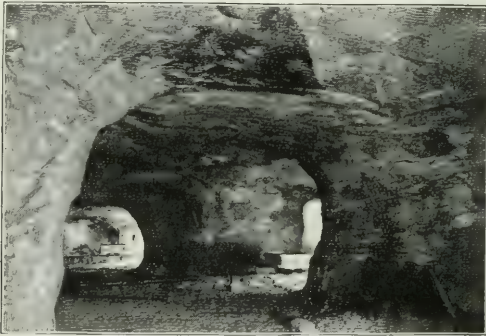


FIG. 141.

In a salt mine, a thousand feet beneath the surface, in central New York. The walls and sides of these tunnels are glistening white salt.

reason, that the chief industry of the New England States is manufacturing. The Connecticut and Merrimac rivers

are the most important. At MANCHESTER (Fig. 140), in New Hampshire, LOWELL and FALL RIVER, in Massachusetts, and PROVIDENCE, in Rhode Island, cotton goods are manufactured in immense quantities; at LYNN, boots and shoes; at SPRINGFIELD, HARTFORD, and other cities, metal goods of all kinds are made. In New York State there is also much manufacturing, at BUFFALO, ROCHESTER, TROY, and other places.

Salt. — An extensive bed of salt is found deep down in the earth, in the central part of New York State, south of SYRACUSE (Fig. 141).

XVI. ATLANTIC STATES SOUTH OF NEW YORK

MAP QUESTIONS.—(1) Which of these Atlantic States does not border on the Atlantic Ocean? (2) Which is the smallest? (3) Name the chief rivers and tell where they are. (4) Which is the most southern Atlantic State? (5) What large island is south of it? (6) What mountain range do you find extending through some of these States? (7) Which States have no mountains?

The Coastline.—In the northern part of these States you will observe that the coastline, as in New England, is very irregular. At three places the sinking of the land has caused the ocean to reach far into the land, forming Chesapeake, Delaware, and New York bays. Farther south, there is a strip of low, level, swampy land, known as the *coastal plains*, extending to the Peninsula of Florida. From the coast the plains gradually rise towards the mountains.

Coal. Oil. and Iron.—The Appalachian Mountains, which extend from Pennsylvania to Alabama, abound in coal, oil, and iron. These being found near together have led to extensive manufacturing. PITTSBURG is the centre of the coal and iron trade in Pennsylvania; BIRMINGHAM in Alabama; and WHEELING in West Virginia. Hard or *anthracite* coal comes chiefly from the neighborhood of SCRANTON and WILKES-BARRE in Pennsylvania. Petroleum is largely found in the western part of Pennsylvania and in West Virginia.

Cotton and Tobacco. — The climate of Virginia is so mild that tobacco of the best quality can be raised there most profitably. RICHMOND is the great tobacco market.

The tobacco plant, which white men found the Indians smoking, has a large leaf that is picked and dried, and then made into cigars and other forms in which tobacco is used.

On the coastal plains the soil is usually fertile, the climate is warm, and there is plenty of rain everywhere. The southern farms are

commonly called *plantations*; and the principal crops, besides tobacco, are rice in the low-lying, swampy lands, and wheat, corn,

and cotton away from the coast. CHARLESTON and SAVANNAH are the principal cotton shipping ports on the Atlantic coast, and MOBILE and NEW ORLEANS on the Gulf of Mexico.



FIG. 142.
The tobacco plant.



FIG. 143.
Negro children on a cotton plantation. The white spots are cotton bolls.

The cotton plant grows to a height of two to four feet. It has a

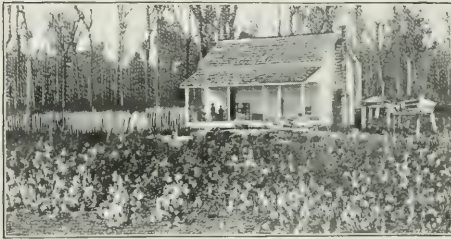


FIG. 144.

A small cotton field and a negro home. The cotton bolls look like white flowers.

white blossom, and, after the flower is gone, a small pod grows. This pod enlarges until it ripens and bursts into a white ball, called the *cotton boll*, which looks somewhat like a milk-weed pod after it has burst open.

The cotton bolls are picked in the autumn, usually by colored people, men, women, and children, and placed in a machine called the *cotton gin*: this removes the cotton-seed, and also separates or combs out the fibres of the cotton.

The cotton is then packed in bales, like hay, and shipped away to be made into thread, cotton cloth, and other goods. Can you name any place in Canada where there is a cotton factory?

Commerce.—A great quantity of the natural products of the Southern Atlantic States, such as cotton, tobacco, and coal, are sent to New England, New York, and elsewhere for manufacturing purposes, and an enormous amount is sent abroad, chiefly to Great Britain.



FIG. 145.

A pine-apple field in Florida.

You will therefore understand how other large seaports, besides New York, have grown up. The largest of these are PHILADELPHIA and BALTIMORE. Another large city in this section is WASHINGTON in the District of Columbia, on the Potomac River. This is the national capital and here are the many great government buildings (Fig. 135).

Fruits. — The low plain of Florida is noted for its fruits. It is so far south that it is warm enough for oranges, lemons, and pine-apples (Fig. 145).

Climate. — The climate of the Southern States is so mild that many people go there in the winter to escape the cold. In the southern part it rarely snows, and flowers are in blossom in midwinter. Do you know why song birds of the north go there in winter?

XVII. THE MISSISSIPPI VALLEY AND GULF STATES

MAP QUESTIONS.— (1) In what State does the Mississippi River rise? (2) In what State is its mouth? (3) What States border it on the east?— On the west? (4) Name the chief tributaries on the east.— On the west. (5) Name the principal cities situated on it. (6) What city on Lake Michigan is nearly connected with it by one of its tributaries?

Surface.— You have learnt (*Our Home*, p. 29) how difficult it is to realize that one is living in a valley, where the slopes are so gentle and the extent so vast as in the Mississippi Valley. This is over three thousand miles



FIG. 146.

Negro women cutting sugar-cane in Louisiana.

long, and many hundred miles wide, extending from the Great Lakes, Manitoba, and the North-West Territories to the Gulf of Mexico.

Products.— In the north and west the country is a vast prairie similar to Manitoba and the North-West Territories of Canada. For the same reasons the climate there is similar; in the West and in Texas, where the

Rocky Mountains intercept the moisture from the Pacific Ocean, the people are chiefly engaged in raising cattle, sheep, and horses; farther to the east, enormous quantities of wheat are raised in Dakota and Minnesota. Going towards the south we find corn the most valuable crop, then tobacco in Kentucky, cotton in Mississippi, and sugar-cane and rice in Louisiana.

The great abundance of the natural products of this region has naturally created special industries at different



FIG. 147.

The Pillsbury-Washburn flour-mills at Minneapolis, Minnesota. The five mills of this Company can turn out 25,000 barrels of flour each day.



FIG. 148.

Cattle in the Chicago stock-yards.

points. At MINNEAPOLIS, the abundant water-power from the Mississippi supplies power for the greatest flour mills in the world. DULUTH, at the head of navigation on the Great Lakes, is another milling centre. CHICAGO, the largest city in the West, at the head of Lake Michigan, is the principal centre of the cattle and grain trade. From its position at the head of lake-navigation, it is the receiving and distributing point for a large part of the trade

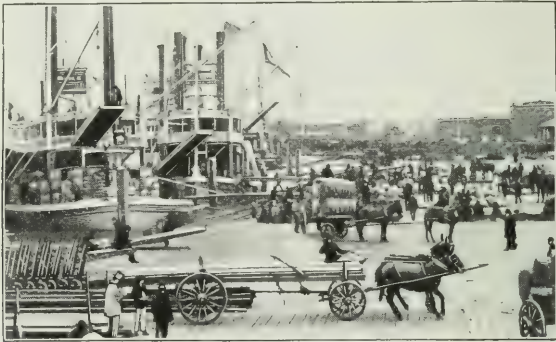


FIG. 149.

Loading and unloading goods on the levee at New Orleans. Notice the mules, one of the most common draft animals of the South.

west of the Great Lakes. As Lake Michigan extends so far south, all the railways from the North-western States must pass to the south of it through Chicago in going east and south-east. Other important cities on the Great Lakes are CLEVELAND, DETROIT, MILWAUKEE, and TOLEDO. State where these are situated.

Passing on to the south we find CINCINNATI and LOUISVILLE on the Ohio, OMAHA and KANSAS CITY on the Missouri, ST. LOUIS on the Mississippi near the mouth of

the Missouri, and farther south, MEMPHIS and NEW ORLEANS, all important cities, the latter being the shipping port for cotton and other Mississippi Valley products to Europe.

Mining. — The principal mining section of this part of the country is in the neighborhood of Lake Superior in the States of Michigan, Wisconsin, and Minnesota, where the richest iron and copper mines in the world are found. In Illinois, Ohio, and Indiana, coal also is found, an invaluable help to the manufacturing industries in these States.

Oklahoma and Indian Territory. — A few years ago the section north of Texas, now called Indian Territory and Oklahoma, was known under the name of Indian Territory, a place set aside by the government as a home for some of the tribes of Indians. But later, these Indians were collected in the part now called Indian Territory; then Oklahoma was opened up to white people for settlement. Now many thousands of white men are living in the *Territory* of Oklahoma.

XVIII. WESTERN STATES

MAP QUESTIONS.—(1) In what direction do the mountains extend? (2) Name the principal ranges. (3) Which are the chief rivers? (4) Which has its source in Canada? (5) In which section are there few rivers? (6) What does that suggest about rainfall? (7) Some rivers empty into lakes that have no outlet. What does that suggest (see *Our Home*, p. 53)? (8) Compare the coastline of the Pacific with that of the Atlantic. (9) What does the coast suggest about harbors? (10) What States border on the Pacific coast? (11) Where are Denver, Salt Lake City, Portland, Seattle, Los Angeles, and San Francisco?

Surface.—Similar to the mountains of British Columbia you will find here several ranges, the most easterly being

the Rocky Mountains. Here, however, they spread wider apart and rise from a vast dry plateau more than a mile above the level of the sea. All these mountains together are known as the Western Cordilleras (p. 89).



FIG. 150.

An orange grove near Los Angeles in Southern California, the irrigation ditch being seen between the two rows of orange trees.

Farming.—Owing to the moun-

tainous nature of much of the country in the south and east, there is comparatively little farming: and, even where the soil is fertile, the climate is usually too dry for cultivation, because the winds that reach it do not carry much vapor. The land, in places, is truly a desert, and one may travel for scores of miles without seeing any vegetation excepting cactus or sagebrush. In some parts, however, where irrigation has been introduced, the dry, sandy desert has been transformed into the most fertile land. You can judge of the dryness of the atmosphere from the Great Salt Lake being without

an outlet (Our Home, p. 53), and you will notice on the map how the Humboldt River in Nevada gradually disappears in the sand. In California, on the contrary, the valley between the Coast Range and the Sierra Nevada Mountains is one of the most fertile parts of the continent, producing great quantities of wheat, and is celebrated for its fruits. LOS ANGELES, a large city, is the centre of one of the garden spots of the world (Fig. 150), where oranges,



FIG. 151.

A western cowboy.

lemons, peaches, figs, olives, almonds, and many other fruits and nuts are produced in great profusion. It is also a famous health resort. Everywhere in that vicinity, irrigation is necessary. Without that a piece of land produces no crops. Farther north, in northern California, Oregon, and Washington, the moist winds from the ocean

render irrigation unnecessary. On the mountain slopes are extensive forests, and in the valleys wheat is largely cultivated.

Mining. — But if much of this country is rocky and arid, there are, as in British Columbia, valuable minerals under the surface.

In 1848 *gold* was discovered in California, and men hastened there in thousands from all over the world, by sea and by land, in spite of great hardships. Ever since then California has been one of the leading states in the production of gold. Now Colorado has taken the lead both in the production of gold and silver.

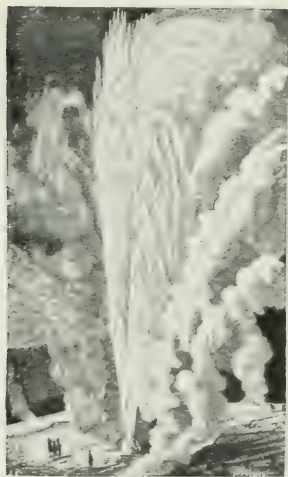


FIG. 152.

The Beehive Geyser, in the Yellowstone National Park, in eruption.

DENVER is the principal centre of the mining region in Colorado, and some of the greatest copper mines in the world are at BUTTE in Montana.

Ranching. — Here, too, the climate and products of the States at the base of the Rocky Mountains resemble those of the North-West Territories, and ranching is the chief occupation from Montana to Texas. The animals raised, cattle, sheep, and horses, are finally shipped eastward to

furnish meat, leather, and wool. It is in these States that the cowboys live, spending most of their days on their horses (Fig. 151).

Wonderful Scenery. — Some of the places in this western country are among the most interesting in the world. In



FIG. 153.

A view in the Colorado Canyon.

north-western Wyoming, in the Yellowstone National Park, are hundreds of springs where the water is so hot that it boils. At some points boiling water and steam shoot upwards with a roar, from holes in the ground, and rise frequently to the height of one or two hundred

feet. These are called *geysers* (Fig. 152). Through this park the Yellowstone River flows, falling 308 feet at one leap into a deep gorge.

No place, however, is more interesting to view than the wonderful Colorado Canyon in Arizona and Utah (Fig.

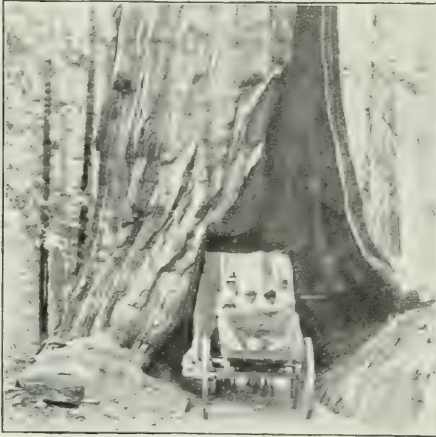


FIG. 154.

One of the "big trees." Notice that through a hole in the trunk a large waggon can be driven.

153), an immense river valley cut in the rocks of the plateau to the depth of over a mile in some places. Trace its course on the map.

In California there are some groves of extraordinary gigantic trees, their straight trunks rising to a height of 300 feet.

A summer house, built on the stump of one which was

cut down, was over 30 feet in diameter. As all the trees near the "big trees" grow to an immense size, from the same cause as in British Columbia (p. 96), it is difficult to realize the wonderful size of these giants.

Seaports. — Comparing the Pacific with the Atlantic coast of the United States, one sees some striking differences. The Atlantic coast is low and very irregular, having many fine bays and harbors, with numerous great cities about them. But the Pacific coast is regular, has

steep mountains rising in many places directly from the sea, and has few fine harbors. SAN FRANCISCO is the most important. From there steamship lines cross the Pacific to China



FIG. 155.

A Spanish mission in Southern California -- a relic of the days when that section belonged to Spain.

and Japan, Australia, and South America. PORTLAND, near the mouth of a small branch of the Columbia River, TACOMA, and SEATTLE are also important shipping towns.

The Mormons of Utah, a people holding peculiar religious views, who were driven out of the Eastern States many years ago, and who settled in that barren region, have changed the desert to a garden by irrigation. They have built the beautiful SALT LAKE CITY near Salt Lake.



FIG. 156.

The desert of Utah, near Great Salt Lake, where there is no fresh water, where it rarely rains, and where there is very little vegetation

XIX. ALASKA

ALASKA, which you see on the map (Fig. 31), although belonging to the United States, is separated from them by the intervening province of British Columbia. This cold



FIG. 157.

Some of the fur-seal on the Pribilof Islands.

barren land was purchased from Russia. It is so far north that it is partly in the Arctic zone, and many people thought that the money paid for it (\$7,200,000) was wasted.

In spite of its inhospitable climate, on account of which few food products can be raised there, it has proved valuable in several ways.

Much gold is mined on the coast just north of Sitka, and during the last four years, thousands of men have gone there in search of gold, just as years ago thousands rushed to California.

It has also gained some prominence from possessing the most convenient routes to the Klondike gold region of Canada, either by way of the Yukon River, or by the railway lately constructed from Skagway (Fig. 127).

A few hundred miles south-west of the mouth of the Yukon are the small Pribilof Islands, to which thousands of seals come every year to rear their young. These supply the beautiful fur-sealskin for cloaks and caps, and are a different species from the seal of Newfoundland.



FIG. 158.

A street in Sitka, Alaska. Although it is summer, notice the snow on the mountains.

Seal hunters are only allowed by the Government to capture some of these each year, so that they may not be totally destroyed. Their fur is very expensive, because the animals are not abundant.

In some parts of Alaska there are great forests, and, on the coast, the fisheries, especially of salmon, are important.

A small strip of the coast with the adjoining islands for some distance south of the main boundary line belongs to Alaska (see Fig. 31), and on one of these islands is the capital, SITKA (Fig. 158).

XX. MEXICO AND CENTRAL AMERICA

MAP QUESTIONS. — (1) What does the map tell you about the highlands and lowlands in Mexico? (Notice the rivers.) (2) Find the capital of Mexico. (3) Why is Central America a fitting name for the region south-east of Mexico? (4) Point toward Mexico. (5) How is Central America joined to South America? (6) What sea is between Central America and the West Indies? (7) What gulf between Mexico and the United States? (8) In what zone is Central America? (9) What large peninsulas are in Mexico? (10) How far is it from Ottawa to Mexico? (11) Name the countries of Central America.

The climate becomes warmer as we approach the equator (p. 8), and as Mexico and Central America are so much



FIG. 160.

Popocatepetl, an extinct volcano, not far from Mexico City, and one of the highest mountain peaks on the continent. Notice that the top is white with snow, although in the torrid zone.

farther south than Canada, it may naturally be understood that the climate is hot there. Notice that a large part of Mexico is south of the tropic of Cancer and that Central America is entirely south of it.

Near the seacoast of Mexico the land is low and the climate hot; but in the interior are many mountains and broad, arid plateaus. These

are a continuation of those in the western United States, and are so high that the climate is cool.

Some of the highest mountain peaks are old volcanoes made of lava that has poured forth from the earth. These peaks are so high that they are always covered with snow, although they are in the torrid zone (Fig. 160).

With such a variety of climate we shall of course find a variety of products. Much of the mountain region is too cold and rocky for farming; but as in the neighboring United States, these mountains yield valuable metals, especially silver.



FIG. 161.

A street in a Mexican town.

Part of the Mexican plateau is dry, from the same cause as affects that part of Canada and the United States which lies on the eastern side of the Rocky Mountains. What is this cause? For the same reason, its value consists largely in wild grass, on which great herds of cattle, sheep, and horses feed. Of what use are these animals? In other parts of the plateau there is enough rainfall for farming; but in most places crops can be raised only by the aid of irrigation.

Along the lowlands of the coast, the rainfall is heavy, and the products are much the same as on the low, damp

plains of the Southern United States. What are they (p. 117)? Besides these, much coffee is grown on the slopes between the coastal plain and the high plateau. Have we found that product before in North America? Other products are pepper, sarsaparilla, and vanilla.

There is very little manufacturing in these countries, for two reasons. One is that coal is lacking. Why is that a good reason? The other is that many of the people are too ignorant to manage machinery.

The Spaniards once owned this part of North America, and their language is still spoken there. Most of the people living in Mexico and Central America are either pure Indians, or else Spaniards with Indian blood in their veins, called *half-breeds*. Only about one man in six is a full-blooded Spaniard.

Mexico is now a republic, like the United States, and its capital is the city of MEXICO, situated more than 7300 feet above the level of the sea. The coast on the east is regular, as you can see, so that there are few harbors. VERA CRUZ is the chief port, but the harbor is poor.

Central America is made up of several republics, each having a capital of its own. Many of the people are very ignorant, and there are frequent revolutions when ambitious generals try to overthrow the government.

At the present time Central America and the Isthmus of Panama are of interest because canals are being dug there to save vessels the long journey around South America. Examine the map (Fig. 30, opposite p. 27) to see how much distance will be saved in this way between New York and San Francisco. In Central America are dense tropical forests from which hard woods (such as mahogany and rosewood), dyes, rubber, and other valuable products are obtained. Bananas and other tropical products are exported.

XXI. THE WEST INDIES AND BERMUDA ISLANDS

MAP QUESTIONS.—(1) Name the largest islands. (2) What group is farthest north?—north-east? (3) Into what groups are the other islands divided? (4) What waters do the West India Islands enclose? (5) How far is it from Florida to Cuba? (6) What is the capital of Jamaica? Of Cuba? (7) What large island is close to the South American coast?

The islands extending from the peninsula of Florida to the coast of South America form an *archipelago*, called the West Indies, from the mistake made by Columbus in supposing that he had reached the coast of India. These



FIG. 162.

View of the city of St. Pierre, Martinique, and of the volcano, Mt. Pelée, which in May, 1902, exploded, completely destroying the city, and in one horrible blast of red-hot, sulphurous ashes and lava, caused the death of every living creature, about 30,000 in number. A similar outbreak took place at almost the same time in the adjoining island of St. Vincent from the volcano, La Soufrière, causing the death of nearly 2000 persons.

islands are very numerous, although many of them are mere rocks. They are really the highest parts of mountain ranges projecting above the sea, many of them of volcanic creation, and so situated that they separate the Caribbean Sea from the Gulf of Mexico and from the Atlantic Ocean. Some of the peaks in the larger islands



FIG. 163.

A field of Easter lilies at Bermuda. These are sent to New York and other cities.

rise from 8000 to 10,000 feet above the sea. It was one of the Bahamas that Columbus first sighted when he discovered America.

Products.—As you will see from the map, all of these islands excepting some of the Bahamas are within the tropics. They have therefore a warm climate, and, since all of the islands are reached by the easterly or trade winds from the

sea, the climate is damp. Tobacco, sugar, coffee, spices, and tropical fruits, such as bananas, are chiefly cultivated.

People. — These islands were originally taken possession of by Spain, but Great Britain, France, and other European countries have since occupied many of them. The descendants of the original native inhabitants have almost disappeared, and a very large portion of the present inhabitants are negroes, the descendants of slaves brought



FIG. 164.

A field of sugar-cane in the West Indies (St. Croix).

from South Africa to work on the plantations. Some of these negroes gained their independence and formed two republics, SANTO DOMINGO and HAITI, both on the island of Haiti.

Cuba and Porto Rico. — The largest island is CUBA, which with PORTO RICO belonged to Spain. After the recent war these two islands came into the possession of the United States, and independence has lately been granted to Cuba.

HAVANA, the largest city in the West Indies, is the capital of Cuba and is noted for its tobacco.

British Islands. — A large number of the islands belong to Great Britain, and are divided into various groups for

government. Of these JAMAICA is the largest, with KINGSTON the capital. Jamaica produces sugar, rum, and molasses, and exports large quantities of bananas to the United States. In TRINIDAD is a remarkable pitch lake apparently inexhaustible, from which is brought the pitch to make the asphalt pavements in our streets.



FIG. 165.

Royal palms in Bermuda.

BARBADOS is the

most thickly populated place in the world, having over 1100 people to the square mile, more than a hundred times as many as there are in a square mile of the eastern provinces of Canada. NASSAU, the capital of the Bahama Islands, is a favorite winter resort. It exports large quantities of sponges.

Sugar. — The cultivation of the sugar-cane was at one time almost the sole industry in the British West Indies,

but the competition of beet-root sugar has greatly destroyed the market for the cane product.

Bermuda Islands. — These are a cluster of about 100 small islands, made of coral sand, as described on page 26. They belong to Great Britain, and only about 15 or 16



FIG. 166.

View of H. M. floating dry-dock at Bermuda.

are inhabited. They are situated in the Atlantic Ocean, about 600 miles east from Cape Hatteras.

The climate there is delightful in winter and has made these islands a favorite resort for visitors during that season. Early vegetables and Easter lilies are cultivated for shipment to the United States.

HAMILTON is the capital and seat of government.

Bermuda possesses a strongly fortified dock-yard for the British Navy.

XXII. SOUTH AMERICA

MAP QUESTIONS.—(1) Compare the shape of South America with that of North America. (2) What great mountain ranges are there along the western side? (3) Which part of South America has no cold winter? (4) Which part has a climate much like that where you live? (5) What is the name of the longest river? (6) Where do you expect to find the most fertile regions? (7) Name the countries of South America.

Relief.—Great mountain chains were found in the western part of North America. What are their names?



FIG. 168.

Two tunnels on a railway line that crosses the high Andes of Peru.

Through what countries do they extend? In South America there are also high mountains on the western side, called the Andes. The peaks of the Andes are higher than those in North America, and there are many active volcanoes among them.

Besides the Andes, the map shows a highland region in Eastern Brazil and a smaller one between the Amazon and Orinoco rivers, forming the divide between them.

The remainder of South America is mainly lowland, drained by three mighty rivers. What are their names? Where does each rise? In what direction does each flow? Which drains the longest slope?



Climate. — The products of the three valleys greatly depend upon their climate; let us, therefore, see how much heat and moisture they have.

Where does the equator cross the continent? Where does the tropic of Capricorn cross it? How much of the continent, then, is in the torrid zone? Where is the coldest part? In which zone?

From the answers to these questions we see that much more than half the continent must have a warm climate; but that the southern part has a temperate climate more like our own. In which months does summer come to this region?

In regard to the moisture in the torrid or tropical part of South America the rains are very heavy. The reason for this is that the air becomes heated and is thus made very light; it is then forced to rise to such a height that the vapor is condensed, causing heavy showers (see *Our Home*, p. 74).

There is less rainfall in the south temperate zone, and still less in the narrow strip west of the central part of the Andes, in Chile and Peru. There the climate is quite arid because the principal winds are from the south and east, so that the air loses its vapor in passing over the mountains and descends upon the Pacific slope as dry, parching winds.

History. — Knowing now the chief facts about the relief and climate, let us look at the countries themselves. After the discovery of South America by Columbus the Spaniards settled in many parts, obtaining great quantities of gold and silver, especially in the Andes. Nearly all of South America once belonged to Spain, excepting Brazil, which was settled and for a long time owned by

the Portuguese. Although the South American countries are now independent nations, the Spanish language is still spoken nearly everywhere, excepting in Brazil, where Portuguese is used.

Brazil. — This is the largest country, being nearly as large as Canada or the United States (including Alaska);

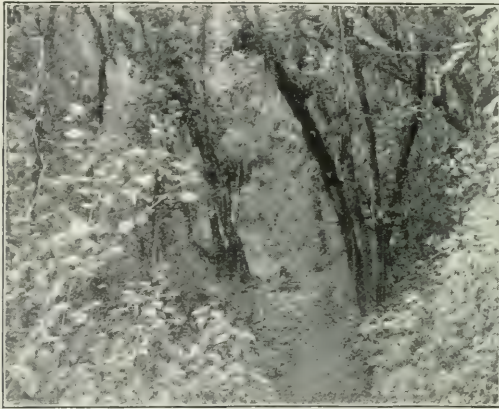


FIG. 169.

A path through the dense tropical forest of South America.

but it has more than three times as many inhabitants as Canada. Much of the great Amazon valley consists of forest-covered plains, called *silvas*, in which the trees are so close together, and there is such a mat of vines and underbrush, that it is extremely difficult for one to make his way through. From what was just said about the climate, you may be able to give the reason for such rank growth.

You will find pictures of some of the wild forest animals in Figure 18, page 19. What are their names?

Of course this forest is not a good home for men, especially since much of the land is frequently flooded; in fact, Indians are almost the only people living there. They make a living by hunting, fishing, and selling rubber from the rubber tree that grows in the woods.

Rubber is obtained by cutting a hole in the bark and catching the milky fluid that flows forth. After being warmed over a fire to make it more solid, it is sent down the river in boats to PARA and then shipped to many parts of the world. Bicycle tires and overshoes are made from it. See how long a list of other rubber articles you can name.

Another common tree is the cocoa tree, on which grow the beans from which cocoa and chocolate are made.

The rivers are almost the only roadways in this great section, so that it is mainly a great wilderness.

Most of the inhabitants of Brazil live in the eastern part along the coast. Some of them are white people, but many are either Indians or negroes, or of mixed blood, as in Mexico. You will notice several cities on the coast, of which RIO DE JANEIRO, the capital, is the largest, being more than twice the size of Montreal. It has a splendid harbor.

There must certainly be some important industries in this region to cause a city to become so large. Besides the raising of cattle upon the plateau of Eastern Brazil, farming is an important industry there. The principal crops are the same as those which you have already learnt are found in warm countries; namely, cotton, sugar, tobacco, and coffee. The last is most important, and Rio de Janeiro is the chief export town, which is the reason why some of our coffee is called Rio coffee.

Venezuela and Guiana. — North of Brazil is Venezuela, which includes most of the Orinoco valley. Here are broad plains, called *llanos*, producing excellent grass, so that cattle raising is one of the important industries. Coffee and cocoa are also cultivated. The capital and largest



FIG. 170.

Native Indian women washing clothes in Venezuela. Do you see in the picture any reason for thinking it is warm there?

Just north of the mouth of the Orinoco River is Trinidad Island, which belongs to Great Britain. On that island is a great pitch lake, from which much of the asphalt used in our street pavements is obtained (see p. 138).

All of the countries of South America are republics excepting Guiana, east of Venezuela, which belongs to three European nations. What are their names? And what is the capital of each section of Guiana? The products of these countries are much the same as those of Brazil and Venezuela.

La Plata Countries. — The country south of Brazil, drained by the Plata River and its tributaries, is one of the most productive parts of South America. Here, at the mouth of the Plata River in Argentina, is BUENOS AIRES, the largest city on the continent. Across the wide river mouth is MONTEVIDEO, another large city, in Uruguay.

city is CARACAS, which is located several miles from the coast upon land more than half a mile above the sea. What advantage do you see in such a position?

What other small country lies between Argentina and Brazil?

The plains in this section of the country are called *pampas*; and because of their excellent grass one of the chief industries is ranching. Since most of the country is in the temperate zone, corn and wheat are important farm products; and in the warm northern part, near the tropics, tobacco and sugar-cane are raised. This part of



FIG. 171.

A scene on the pampas of Argentina.

South America corresponds most nearly in climate and products to Canada and the United States.

Goods are still carried upon the rivers in Argentina, but there are also many railways in that country, more, in fact, than in any other part of South America.

Andean Countries. — The countries in the western part of South America are very mountainous, since each of them includes a part of the Andean chain. As you might expect, then, one of the principal industries is mining; and immense quantities of gold and silver have been found there. What are the names of these countries?

As there are many active volcanoes in the Andes Mountains, the countries of that part of South America are subject to earthquakes, some of which have been very disastrous, destroying much property and many lives.

Observe that most of the cities are not upon the coast. This is partly because they have grown up in the mining districts among the mountains, and partly because there are so few good harbors. Many of the interior cities have

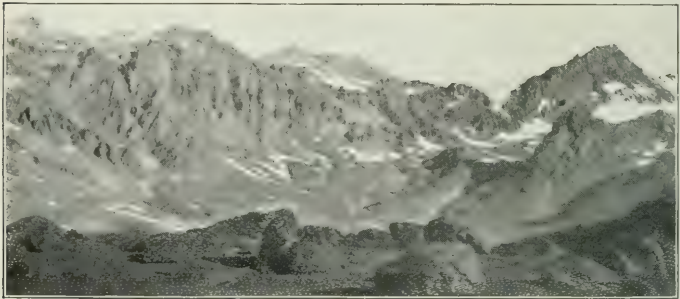


FIG. 172.

A scene among the lofty snow-capped mountains of Chile.

seaports, as CALLAO in Peru, the seaport of LIMA. Find others.

VALPARAISO, in Chile, is the largest port on the Pacific coast; but SANTIAGO the capital, situated fifty miles inland, and about one-half mile above the sea, is more than twice as large. Notice how long and narrow Chile is; what reason can you give for that?

Farming is possible in the northern part of the western coast, where the rainfall is heavy; but farther south, as in Peru and northern Chile, agriculture is impossible without irrigation. The desert of Atacama, a strip of land between the Andes and the Pacific Ocean, extends

for a thousand miles along this coast, and there a shower of rain rarely occurs. In southern Chile, however, the rainfall is moderate, and many people have settled there, because the farming and grazing are excellent.

Which of the Andean countries has no seacoast? Is that any disadvantage? One country is called Ecuador, which is the Spanish word for equator. Why is that a fitting name? Notice that Colombia has seacoast on the two oceans and includes the Isthmus of Panama. What cities do you find on the two sides of the Isthmus? They are connected by a railway. Why is this important?

The Isthmus of Panama is, as you can see by the map, the narrowest part of the continent. A railway, $47\frac{1}{2}$ miles long, connects Panama with Colon; and a ship canal has been partly constructed at an enormous cost to connect the two oceans. It will be 46 miles long.

Tierra del Fuego. — This is the extreme southern part of South America, and is separated from the continent by the Strait of Magellan. This strait forms a passage for steamships, but as it is narrow and rocky, and the weather there is generally stormy and foggy, sailing ships must pass round Cape Horn. This is a point dreaded by sailors on account of the tempestuous weather usually encountered there.

The FALKLAND ISLANDS and SOUTH GEORGIA, west of the extreme southern point of South America, are almost the only islands in the western South Atlantic Ocean and belong to Great Britain. The few people who live there raise sheep and export wool.

What small group of islands is in the Pacific Ocean west of Santiago in Chile?

XXIII. EUROPE

MAP QUESTIONS. — (1) On page 20 it was stated that Eurasia consisted of two continents, Europe and Asia. Trace the boundary line between them, naming the mountains and waters that form it. (2) One of the seas has no outlet: which one is it? What kind of water would you expect to find in that sea? (3) How does the coast line of Europe compare with that of South America? Of North America? (4) Would you expect to find many good harbors? (5) Name the largest peninsulas and draw an outline map to show them? (6) Where are the highest mountains? (7) One of the Alpine peaks is Mt. Blanc. What have you already learned about it? (See *Our Home*, p. 20.) (8) Where are the plains? Which very large country is made up mainly of plains? Find the position of Sicily and of Sardinia. (9) In what zones is Europe? (10) How do you think its climate would compare with that of Canada? (11) With what part of Canada do the British Isles correspond in the temperate zone? (12) What countries in Europe do you know something about? (13) By what route would you go from Montreal to one of them? (See Fig. 30.)

Europe is only a little larger than Canada, or than the United States with Alaska, but contains more than four times as many inhabitants as the whole of North America. These are separated into a score of nations with a different language for nearly every one. (*Our Home*, Fig. 94, p. 95.)

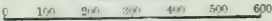
Inasmuch as our country and this continent were first discovered by Europeans, and as various European nations have furnished most of the civilized population, Europe may be regarded as the Fatherland of us all.

Handwritten signature



EUROPE

Scale of Miles.



Capitals ● Other Cities •

ATLANTIC OCEAN

ARCTIC CIRCLE

BRITISH ISLES

SCOTLAND

IRELAND

ENGLAND

FRANCE

SPAIN

GERMANY

ITALY

NETHERLANDS

PRUSSIA

AUSTRIA-HUNGARY

DEENMARK

SWEDEN

NORWAY

RUSSIA

OTTOMAN EMPIRE

GREECE

ASIA

AFRICA

MOROCCO

EGYPT

INDIA

Longitude West from Greenwich

Longitude East from Greenwich

CRT. E.



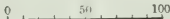
W. H. Miller

McKevilly

J. R. [unclear]

BRITISH ISLES.

Scale of Miles.



- Cities with over 1,000,000 . . . London
- Cities with 200,000 to 1,000,000 . . . Liverpool
- Cities with 100,000 to 200,000 . . . Portsmouth
- Smaller Places . . . Plymouth
- Capitals of Countries . . . Other Places



XXIV. THE BRITISH ISLES

MAP QUESTIONS. — (1) Walk towards the British Isles. (2) What two large islands do they include? (3) What waters separate these two? (4) What three groups of islands are north of Scotland? (5) What island is in the Irish sea? (6) What sea is east of Great Britain? (7) What country of Europe is nearest to England? (8) What waters separate the two? (9) Make a sketch map of the British Isles. (10) Compare the west coast with the east. (11) What islands near the French coast belong to Britain?

Our Mother Country. — The people in Europe to whom we are most closely related live on the small group of islands, called the **BRITISH ISLES**, which lie just west of the mainland. This is often called our “mother country.” Can you tell why?

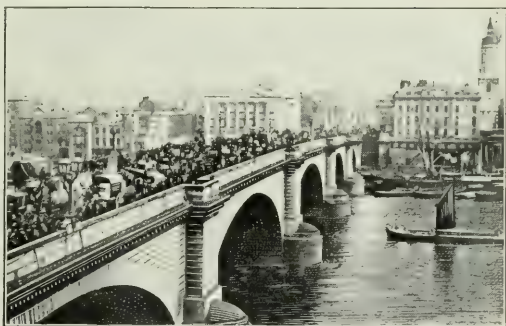


FIG. 175.

London bridge across the Thames, over which a busy throng is almost constantly passing.

Extent. — There are two large islands, **GREAT BRIT-**

AIN and **IRELAND**, besides many small ones. Into what two parts is the island of Great Britain divided?

Although the British Isles do not comprise much more than one-half the area of Ontario, they contain seven times as many people as the whole Dominion of Canada. They are the centre of the British Empire, and the centre of the commerce of the world.

Position.— Judging from their position one might expect these islands to be too cold for agriculture, for they



FIG. 176.

The House of Parliament.

are farther north than the mouth of the St. Lawrence River, and occupy the same position as bleak and barren Labrador. But the climate is not colder than that of southern Canada. The reason for this is that the western coast of Europe is warmed by a broad current or *drift* of warm ocean water, known as the Gulf Stream. This flows from the warm Southern Seas north-easterly along the North American shore, in the Atlantic Ocean, and continues across to the coast of Europe. The air above it becomes warmed, and, since the winds of Europe blow chiefly

from the west, they carry the warmth with them and produce a climate much milder than one would otherwise expect.

Commerce. — In spite of the small extent of the British Isles, the position they occupy is most favorable for commerce, and the largest city in the world is LONDON, the capital. Here, although it is more than three hundred miles farther north than Quebec, snow is rarely seen.



FIG. 177.

The Thames River and Windsor Castle, a royal palace.

London is the central seat of government for the British Isles, as well as for the whole British Empire. Here are situated the House of Parliament (Fig. 176) and Buckingham Palace, the city residence of the King. Besides this latter there are Windsor, Osborne, Balmoral, and other royal palaces in different parts of the country.

You have read about the Canadian form of government for the Dominion (Our Home, p. 123). This has been modelled on the British system: the King (in Canada represented by the Governor-General), the Lords (in Canada, the Senate), and the Commons, the representatives of the people. King Edward VII. is King of Great Britain and Ireland, and of the British Dominions beyond the sea.

and also Emperor of India. There are no local Houses of Parliament for the separate countries, as in Canada for the different provinces.

Great Britain has more manufacturing, more freight trade, a greater number of vessels upon the sea, than any other nation in existence. There are, of course, reasons for these remarkable facts, and one of the most important is the mineral wealth of the country.

Mining. — One of the resources of the British Isles which attracted people in the early times was the tin

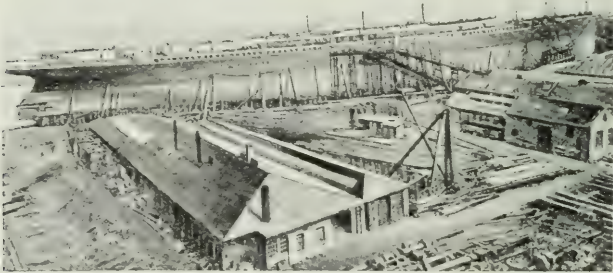


FIG. 178.

View of a shipyard on the Clyde. The "Lucania," one of the largest steamships afloat, ready to be launched.

mines in the south-western part of the country. This metal is not mined in many parts of the world, but has always been in great demand. But the abundance of two other minerals, coal and iron ore, has been the main foundation of Britain's progress. These are usually found close together in different parts of ENGLAND and SCOTLAND, and this combination has made it possible to build iron steamships and machinery there to the best advantage.

BIRMINGHAM is the great centre for the iron trade in England. But GLASGOW is the greatest centre for steel shipbuilding, which industry is also largely carried on at BELFAST, at LONDON, and at NEWCASTLE. Coal is shipped chiefly from NEWCASTLE and CARDIFF. Other important seaports are BRISTOL, HULL and SOUTHAMPTON in England, and LEITH (for Edinburgh), GREENOCK,



FIG. 179.
The Manchester Ship Canal.

DUNDEE, and ABERDEEN in Scotland. At QUEENSTOWN, and MOVILLE near LONDONDERRY, the steamships call on their way to and from Canada and the United States.

Agriculture. — WALES and much of Scotland are too hilly to be well adapted to agriculture, but many cattle and sheep are raised there. In England and in the lowlands of Scotland, as the land and climate are better suited for that purpose, there is much more farming. The damp air and the rain from the prevailing westerly winds blowing from the

ocean cause the grass to grow well. Hay is, therefore, an important crop, and there is rich pasture land for the numerous sheep and cattle. But as you learned in *Our Home* (p. 101) there are so many people in the country, that there is not land enough to grow sufficient crops to feed all of them. For this reason, enormous quantities of provisions and grain have to be imported from Canada and other countries.



FIG. 180.

Edinburgh Castle, a celebrated old historic fortress.

Manufacturing. — Mining and agriculture are not the chief occupations. Having much wool from the large flocks of sheep raised on the fine pasture lands, the people long ago learned to make woollen cloth. In addition to that they purchased cotton

from other countries, the United States, Egypt, and India, and made cotton goods. The centre for this manufacturing is MANCHESTER. Thirty-five miles from it is LIVERPOOL, which, next to London, is the greatest seaport in Britain. Recently a ship canal, called the Manchester Canal (Fig. 179), has been built, connecting these two cities. Find them on the map. For woollen manufactures BRADFORD, LEEDS, and other cities in the same district are also important. SHEFFIELD is noted for its cutlery.

The lowland portion of Scotland, especially in the neighborhood of Glasgow and EDINBURGH, is noted for its cotton and woollen factories.

IRELAND is not so much interested in manufacturing, although linen is an important product in the north, and iron shipbuilding is a large industry at Belfast. It is really, to a great extent, a farm, furnishing cattle, butter, eggs, and other farm products for the English markets.



FIG. 181.

View in the celebrated Lakes of Killarney.

The air there is so moist that the grass is kept fresh and green, and on that account Ireland is often called the Emerald (or Green) Isle. The two largest cities are naturally on the side next to England. What are their names?

Industries. — From the position of the British Isles, surrounded by water, it is natural that many of the inhabitants become trained to a seafaring life, either as traders or fishermen. The shallow banks and the waters of the North Sea abound with cod, haddock, flat fish, and herring.

just as our Gulf of St. Lawrence and Banks of Newfoundland do, and afford employment to many thousands of men.



FIG. 182.

The Clyde, at Glasgow.

The peculiar energy and inventive genius of the British people kept them in advance of the Continental nations, who were always more or less engaged in warring against



FIG. 183.

The Rock of Gibraltar, a British fortress, guarding the entrance to the Mediterranean Sea. This view is taken from the Spanish coast, showing the narrow neck of land which connects it with the mainland.

each other. It was the Scotsman, James Watt, who invented the modern steam engine, and it was George Stephenson who invented the first locomotive. The very smallness of the country is another advantage; for, no matter where a factory may be situated, it is near the coal fields and within a few miles of a shipping point.



FIG. 184.

Harbor of Valetta, the chief town of the island of Malta; the headquarters for the British fleet in the Mediterranean Sea.

Shipping. — To guard the coast against enemies made a fleet necessary. This fleet made Great Britain mistress of the seas. To build, equip, and maintain this fleet, great dockyards and arsenals have been built at PORTSMOUTH, PLYMOUTH, CHATHAM, and WOOLWICH (near London). Having so many ships, the British have been led to explore countries and to carry on trade in all parts of the world.

The narrow limits of their own country caused many to look out for other lands, and so the foundation of Britain's Colonial Empire was laid. Thus, Great Britain has come into possession of Canada, Australia, India, a large part of Africa, and many islands besides. These are called *colonies* and form part of the British Empire.

You have learnt what important depots for the British fleet there are in Canada, at Halifax and Esquimalt, and also at Bermuda. To protect her European commerce, and to keep the way open to the Suez Canal, Britain has the strong fortress of Gibraltar at the entrance to the Mediterranean Sea, and the important island of Malta, between Sicily and the African coast.

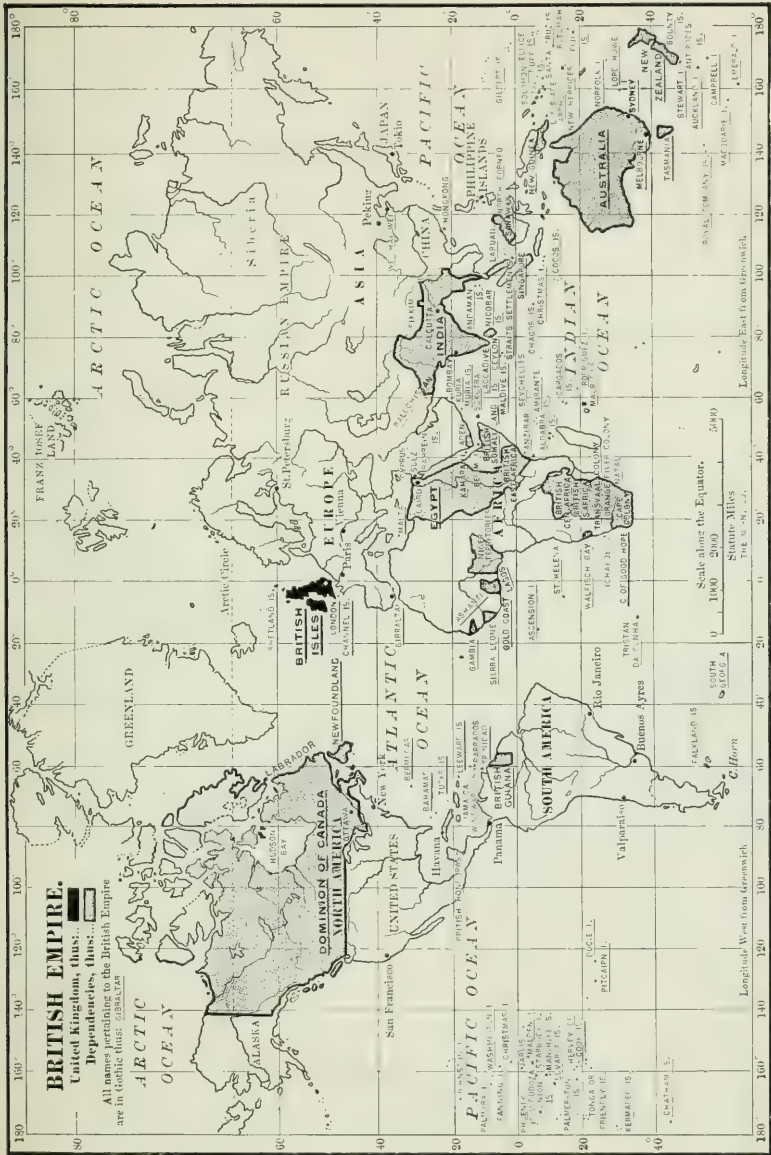


FIG. 185.

XXV. OTHER COUNTRIES OF EUROPE

Norse Countries.—**SWEDEN AND NORWAY.** These two countries together occupy the Scandinavian peninsula, and are about as far north as southern Greenland (see map, Fig. 30). Were it not for the Gulf Stream, which flows past Norway, this, like Greenland, might be a



FIG. 186.

North Cape, the northern point in Norway. The summer sun is shining here at midnight, because the cape is within the Arctic circle.

barren, frozen country. As it is, however, many people live there.

HAMMERFEST is the most northerly town in the world, and being within the Arctic circle, the sun is visible all night long in the middle of summer. The northern part of Norway is therefore often called "the land of the midnight sun."

As in Scotland, most of the country is too hilly and rocky for farming, although some grain, cattle, and sheep are raised, especially on the lower land of southern Sweden along the Baltic. Few people live in the highlands, and about one-fourth of Norway is covered by forests, which supply timber and wood pulp for making paper. This is sent chiefly to Great Britain. In Sweden there are valuable iron and copper mines, and the Swedish iron and steel are famous.

The coast is very irregular, and many deep, narrow bays, or *fiords*, reach into the land, making fine harbors. As a result, Norwegians and Swedes are skilful sailors. In the early days these Northmen were the best sailors in the world, and they came to the American shores long before Columbus discovered America. Fishing for cod and herring is now one of their important industries.

The principal cities are STOCKHOLM and CHRISTIANIA. Find each on the map (Fig. 173). They are the capitals of Sweden and Norway, but the entire peninsula is ruled by one king, the government being a monarchy.

DENMARK, just south of Norway and Sweden, is inhabited by people similar to those in Scandinavia; in fact, these three are often called the *Norse* nations, or the nations of the Northmen.



FIG. 187.

One of the deep, narrow fiords of Norway.

The Danes, also, have been great sailors, and now have possession of Iceland and the west coast of Greenland. Their country presents

a very different appearance from Norway and Sweden, for the land is low and level, and farming is the occupation of about one-half the people. Large quantities of farm and dairy products are exported, chiefly to Great Britain.



FIG. 188.

Danish women selling fish.

Fishing is also an important industry.

The government is a monarchy, the capital and largest city being COPENHAGEN, situated on one of the islands belonging to Denmark, between the mainland and Sweden.

Russia. — The Russian Empire not only includes great plains in Europe, but extends several thousand miles beyond the Ural Mountains to the eastern coast of Asia: it is nearly as large as the whole of North America and contains a greater number of inhabitants.

Most of Russia in Europe is a level country. The northern part, like northern Norway, is in the frigid zone, and so far away from the ocean that the climate is extremely cold. The plains there, called *tundras*, like the far northern part of Canada, are too cold for trees, and the frost never leaves the ground except at the very surface in summer. Nevertheless, a moss flourishes and supports numbers of reindeer, which are used as draft animals by the natives of Lapland, as the northern part of the country is called.

The south-eastern plains, called *steppes*, are so far from the ocean that the west winds can bring them little rain. They are therefore dry like the arid region east of the Rocky Mountains. But the central and southern parts

are well suited to farming, and there most of the people live. Between the Baltic and the Black Seas in the south-west, one of their main crops is grain, especially wheat; and vast numbers of cattle and sheep roam over the broad, grassy steppes; in the north-west, flax and hemp are cultivated.

The rivers are excellent waterways, the largest of all being the Volga, the greatest river in Europe, famous for its sturgeon fisheries. What others do you find?

Since the Caspian Sea has no outlet, and the Arctic Ocean on the north side is frozen

much of the time, the chief ports for foreign commerce must be either on the Baltic or the Black Sea. This explains the location of ST. PETERSBURG, the capital and largest city, which ranks fifth in size among the large cities of Europe. ODESSA, on the Black Sea, contains many flour-mills and is the most important port for the export of wheat.

The chief railway centre is Moscow in the interior,



FIG. 189.

Greek Church at Moscow.

The Greek form of the Christian religion is the established church of Russia.

which is nearly as large as ST. PETERSBURG. WARSAW is another large city, formerly the capital of the ancient Kingdom of Poland. A great railway is being built (see map, Fig. 204) to connect St. Petersburg with VLADIVOSTOCK and PORT ARTHUR on the Pacific Ocean. This



FIG. 190.

A family of Russian peasants.

will be nearly twice as long as our Canadian Pacific Railway.

The great mass of the people were formerly *serfs*, and were virtually slaves like the negroes of America. Although they received their freedom some time ago, they are not allowed to take any part in the govern-

ment, and, unlike most of the European people, are kept in ignorance and subjection. The ruler of Russia is called the *Czar*, who makes and executes laws very much as he pleases. That kind of government is called an absolute monarchy, or despotism, and is very different from the limited monarchies thus far studied.

Germany.—The general slope of the land in Germany is shown by the rivers; in what direction do most of them flow? The southern part of the country consists of mountains and highlands, but the northern part is a great plain, a continuation of the plains of Russia.

As in Russia, there is much agriculture, one of the chief products being grain. Much of their bread is made from a grain called rye, and is so dark that it is called "black

bread." Beets are grown in enormous quantities, and sugar is manufactured from them as it is from sugar-cane in the West Indies. Grapes flourish along the upper Rhine River, and from these wine is made; and more hops for making beer are raised in Germany than in any other country of the world.

Both coal and iron ore are mined in abundance; and many articles are manufactured, such as the famous Krupp guns and many kinds of machinery. Germany is noted also for its manufacture of cotton, woollen, and linen goods, ranking

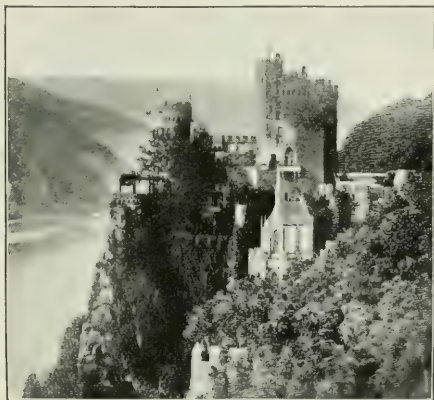


FIG. 191.

A castle on the Rhine.

next to Britain as a manufacturing country of Europe.

The chief seaport is HAMBURG on the Elbe River, a city about the same size as Liverpool. Why should the chief port be at this point rather than farther east on the Baltic Sea? A ship canal has recently been dug across the peninsula, from Kiel to the mouth of the river Elbe, south of Denmark. What are the advantages from it?

The schools, universities, and museums of Germany are among the best that exist, and are attended by many students from other countries for the purpose of studying music, painting, and other subjects. The largest university is in BERLIN; LEIPZIG also has one, and there are many more. MUNICH and DRESDEN are noted for their fine

picture galleries, and so is BERLIN, which also has several large museums. Find these cities on the map.

BERLIN, the capital of Germany, is the largest city.



FIG. 192.

The Royal Museum at Berlin.

The government is a limited monarchy, and the present ruler is Emperor William II.

Holland, or the Netherlands (a word that means *low-lands*), is a low, flat country, much of it being lower than the neighboring sea.



FIG. 193.

A canal in Holland.

The inhabitants have built embankments, called *dikes*, to keep the sea out, and have dug canals across the country to drain it. The water that collects inside the embankments is pumped out by windmills, or

by steam, into the canals, and these canals form the chief roads;

being used in summer by boats and in winter by people on skates or on sleds.

The damp soil furnishes excellent grass, so that cattle raising and dairying are the principal occupations.

The **Hollanders**, or **Dutchmen**, living so near the sea, were at one time noted sailors and explorers, like the British. For this reason they came into possession of some of the richest islands in the East Indies, from which are obtained valuable products, such as coffee, spices, and precious stones. On the map, Figure 233, facing page 204, find the names of some of the Dutch East Indies. Find out about the early Dutch settlements in America. What great American city did they found?

The chief city is **AMSTERDAM**, which is more than twice the size of Montreal. The government is a monarchy, and the laws are made at **THE HAGUE**, on the coast.

Belgium, like Holland, has some land that is lower than the sea and protected by dikes; but the eastern part is much higher.

The people are crowded together more closely than in any other country of Europe. Many live on farms and raise much the same products as those of Holland and Germany. What are these?



FIG. 194.

A windmill, in Belgium, like those so common in Holland.

Flax is an important farm product. It is a plant about two feet high, the fibre of which is used in making linen and fine laces. The Belgians have long been skilful in such work, and it was from them that the British received some of their knowledge about manufacturing. **BRUSSELS**, the largest city, is famous for its fine laces, linens,

and Brussels carpets, the latter being made of wool on a mat of linen.

There is a great amount of coal and iron in this little kingdom, so that the iron industry is extensive, as in Germany. LIÈGE is the centre of the iron manufactures.

The government is a monarchy with BRUSSELS for its capital. ANTWERP is the chief seaport.

France. — The slope of the land in France you may learn by the course of its rivers. What are their names? Where do they rise and in what direction do they flow?

In the cool northern part the crops are similar to those of Germany; but in the southern portion the climate is warmer and the crops somewhat different. Grapes are grown in great quantities, especially in the champagne country of the north-east and the region of BORDEAUX. These are made into wine that is sold in every part of the world. Much silk is also produced.

Silk is manufactured from cocoons spun by a caterpillar called the *silkworm*. Each one of the cocoons is made of a fine thread several thousand yards long, looking somewhat like the thread of a spider's web.

After the cocoons have been softened in hot water the threads are unwound and then wound upon spools. They are later made into thread and woven into silk cloth, ribbons, handkerchiefs, and other silk goods.

Much depends upon the proper care of the silkworm. Their principal food is the leaf of the mulberry tree, which is planted in great groves in the Rhone Valley, in Southern France. The leaves are plucked and the worms fed with them.

LYON, the centre for the silk industry, and the greatest silk market in the world, is next to the largest city in France.

PARIS, the largest city in France, is the third in size in

the world, and one of the most beautiful. Like several cities in Germany, it has fine picture galleries and museums, and many foreigners go there to study painting, music, and other subjects. It is situated upon the Seine River, and its chief port is HAVRE, at the mouth of the

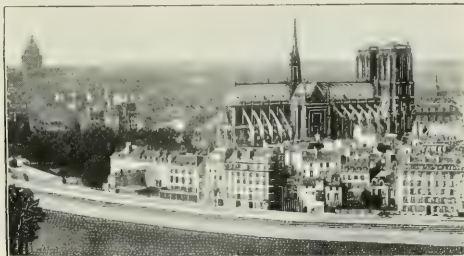


FIG. 195.

A view of the great city of Paris.

Seine. From ST. MALO, a small port between Havre and Brest, Jacques Cartier started on the voyage which led to the discovery of Canada.

BORDEAUX, already mentioned, is an important shipping port for wine, and



FIG. 196.

The harbor of Marseille.

MARSEILLE the principal port upon the Mediterranean coast. From these three harbors France ships goods to and from her

several colonies and other countries. TOULON, on the Mediterranean, and BREST, on the north-west coast, are the most important naval stations.

The French government was formerly a monarchy, but

is now a republic with PARIS as its capital. The island of CORSICA in the Mediterranean belongs to France.

Spain and Portugal. — The Pyrenees Mountains form the boundary between France and Spain, rising like a great wall to separate the two countries.

You may remember that Magellan was a Portuguese and that it was to Spain that Columbus went for help. These were once among the most powerful nations in the world, and they ruled much of North America and most of South America. Little by little they have lost their colonies in the New World, the last to be taken being Cuba and Porto Rico.

Like Mexico, which was settled and for a long time owned by the Spaniards, Spain has a dry, mountainous plateau or table-land in the interior, with low land along the coast.



FIG. 197.

A view of a part of Madrid and the great plateau on which it is situated.

Being so much like a desert, one would expect few people to make their homes in the interior; and this is the case, although, strange to say, the greatest city, MADRID, is found in the centre

of this table-land. Its importance is due to the fact that it is the capital of Spain.

As upon the dry Western plains and plateaux of our continent, cattle and sheep raising are important industries on this highland. But the rocks of this region contain its chief

wealth, for Spain produces more quicksilver and lead than any other nation, and more copper and iron than most others.

There is considerable farming in the mountain valleys and on the low lands along the coast. One of the most valuable crops is grapes; you have doubtless seen Malaga grapes, named from the city of MALAGA on the southern coast. Many grapes are made into wine; others are dried to make raisins, which are shipped chiefly from VALENCIA. Other fruits grown there are olives, lemons, oranges, and figs; besides these, much cork is obtained from the bark of the cork-oak.

BARCELONA, on the eastern side, is the chief port of Spain. From Palos near CADIZ, Columbus started to discover America. The principal city of Portugal is LISBON, the capital; port wine is shipped from OPORTO.

The BALEARIC ISLANDS in the Mediterranean and the CANARY ISLANDS off the coast of Africa belong to Spain. The AZORES, west of the Strait of Gibraltar, and the CAPE VERDE and MADEIRA Islands off the coast of Africa, belong to Portugal.

Both governments are limited monarchies, like those of most European countries.



FIG. 198.

St. Peter's Cathedral on the left, and the Vatican, the residence of the Pope, on the right.

Italy was once the most powerful country in the world. Its principal city was ROME, and the Romans ruled nearly all the other countries then known. But, like Spain, it has lost much of its importance.

ROME is still the capital and the residence of the king; also of the Pope, who is the head of the Roman Catholic Church. The city is especially noted for its many ruins of buildings erected hundreds of years ago.

VENICE, at the head of the Adriatic Sea, is another interesting city. It is built upon many islands joined by hundreds of bridges, and its



FIG. 199.

One of the canals of Venice with a gondola floating upon it.

chief streets are canals, where boats called *gondolas* are used in place of waggons and carriages.

NAPLES, which is on the coast south-east of Rome, and near Mt. Vesuvius, is the largest city in Italy. The steam rising from the crater of Vesuvius is easily seen from the city (Fig. 11). Volcanic ash from Mt. Vesuvius has entirely buried some of the towns near by, such as the ancient city of Pompeii, from which the ashes have been dug away so as to bring to light the buried buildings and streets.

The best farm land is in the valley of the Po River in the northern part, where wheat and other grains, and mulberry trees for silkworms,

are raised. MILAN, like Lyon in France, is a great centre for silk. The large islands of *SARDINIA* and *SICILY* belong to Italy.

The climate is mild enough to produce the same fruits that are grown in Florida and Southern California. Name some of them.

Switzerland.—Any one who has heard the story of William Tell, or who has read about the St. Bernard dogs kept by the monks, has some idea of how Switzerland looks.

Here are the snow-capped Alps, with many lakes and fertile valleys between them, and views so beautiful that thousands of people go every year to enjoy them (*Our Home*, p. 20). One of the oc-

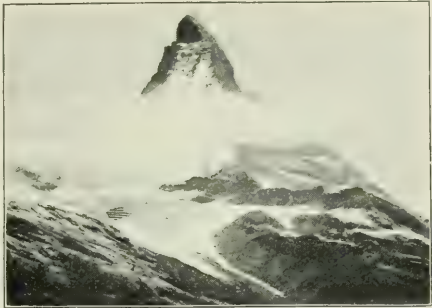


FIG. 200.

The snow-capped Matterhorn, one of the Alpine peaks.

cupations of the Swiss is to provide for these visitors, and the Swiss mountaineers are famous all over the world.

The green grass in the low-lying valleys and on the mountain sides provides excellent food for cattle and goats, so that butter and cheese are made, as in Holland. Probably you have heard of Swiss and Dutch cheese.

Watch-making and wood-carving are also important industries. During the long winters the wood grown upon the mountains is carved into toys, clocks, and many other articles. Have you ever seen a Swiss clock?

Name the countries on each side of Switzerland, and notice that it is surrounded by people who speak German, French, and Italian. In consequence, instead of having one language of their own, the Swiss have these three, those living in each part speaking the language of the foreign country nearest to them.

The Swiss government has long been a republic, like that of the United States, and **BERNE** is the capital. Find on the map (Fig. 173) the chief cities, **ZÜRICH**, **GENEVA**, and **BASEL**.

Austria-Hungary.—Austria and Hungary are united under one monarchy, although they have different customs and languages. Many of the Austrians are closely related to the Germans; but the Hungarians are a very different



FIG. 201.

A view on the Danube in Austria.

race. The capital and largest city is **VIENNA**, the fourth in size in Europe. It is situated on the Danube River, the great central water highway, so that it has water connection with many other places.

BUDAPEST, the capital of Hungary, is next to Vienna in importance. It is in the midst of a great wheat region, and is a flour-milling centre. The cultivation of flax leads to another manufacturing industry. What is it?

Which parts of Austria-Hungary are mountainous? Much coal and iron are found in the north-western part near Germany, and **PRAGUE** is noted for the manufacture of hardware. The chief harbor is on the Adriatic coast; what is its name?

Greece.—The country in Europe which has perhaps

had the greatest influence upon the rest of the world is Greece. The Romans received many of their beliefs and customs from the Greeks; and since many of ours come from the Romans, we also are greatly in debt to the Greeks.

The centre of this influence was *ATHENS*, once the most famous city in the world. Many years later, at the time of Christ, it was still an important place. Both Athens and Corinth, near by, are mentioned in the Bible.

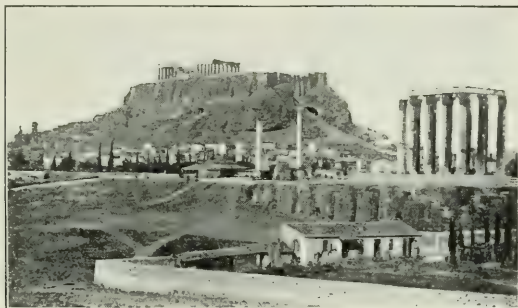


FIG. 202.

The Acropolis with its ruins on top, and the ruins of the Temple of Jupiter on the right, both in ancient Athens.

The country is mountainous, producing currants, or dried Corinth grapes, and other fruits, and much grass for grazing. But there is little mining and manufacturing.

At one time the Greeks were conquered by the Turks and very cruelly treated by them; but they obtained their independence, and their government is now a monarchy with *ATHENS* for its capital.

Turkey. — The largest city in south-eastern Europe is *CONSTANTINOPLE*, which, in appearance, is more Asiatic than European. Notice what an excellent location it has. It is the capital of Turkey, which, like Russia, is a country partly in Europe and partly in Asia.

The Turkish government is the worst in Europe. The ruler, called the *Sultan*, is an absolute despot, who governs his people so badly that they are kept extremely ignorant and poor. In all the

other nations of Europe the Christian religion, either Protestant or Catholic, is followed; but the Turks are Mohammedans, followers of Mohammed, like many other people in Asia and Africa. They are religious fanatics, and dislike Christians very much (see p. 180).



FIG. 263.

A mosque, or Mohammedan church, in Constantinople.

One proof that the Turkish government is bad is the fact that the people in many parts of the Empire have rebelled against it and fought for their freedom. For example, Roumania, east of Austria, used to belong to Turkey, but it is now an independent kingdom. The same is true of Bulgaria, Serbia, and Montenegro; Greece has already been mentioned.

The large island of CRETE, at the entrance to the Ægean Sea, belongs to Turkey, but is under the government of a high commissioner appointed by the Great Powers of Europe.

The people in all these countries are largely engaged in farming and herding, the Danube Valley being especially fertile. Grain, wine, raisins, and wool are important products.





XXVI. ASIA

MAP QUESTIONS. — (1) Through what zones does Asia extend? (2) What climate would you expect to find there? (3) Where are the highest mountains and plateaux? (4) What rivers have their sources in that region? (5) What large inland seas do you find? (6) What three large peninsulas on the southern side? (7) What three were found on the south side of Europe? (8) How does Asia compare in size with Europe? (9) Find Asia on a globe. (10) How could you reach it from Canada, if you wished to go there?

Physical Geography. — Like Europe, the coast of Asia is very irregular, with many peninsulas and islands. Draw an outline map of it, showing these with the larger bays and seas enclosed by them.

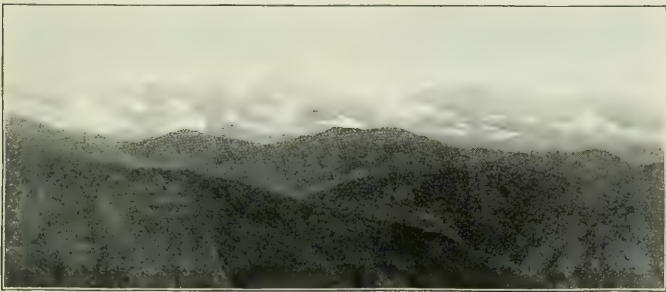


FIG. 205.

The snowy range of the lofty Himalayas.

Note the direction in which the many mountain ranges extend. The loftiest among them, and in fact the highest in the world, are the Himalaya Mountains (Fig. 205), the highest peak, Mount Everest, being over twenty-nine

thousand feet, or about five and one-half miles, above the sea. Where is it? How does it compare in height with Mt. Blanc? (See p. 246.)

North of the Himalayas are lofty plateaux, one of them, the plateau of Tibet, being about three miles in height.



FIG. 206.

The market-place at Jaffa (the ancient Joppa). From here a railway runs to Jerusalem.

How does that compare with the Spanish plateau (see p. 248) and with the western Rocky Mountain plateau in the United States (see p. 248)? It is so high that the winter climate is very cold; and since the winds from the ocean have lost their moisture in passing over the mountains, these plateaux are also dry. Farther north it is drier still, and we find there the great desert of Gobi.

These mountains and plateaux form the watershed of the continent. Find three great rivers that flow northward from the watershed through the vast plain of Siberia. Name three that flow eastward into the Pacific Ocean. What others flow southward?

The south-western portion of Asia is mainly a desert, because the winds blowing over it come from the land instead of from the sea, and therefore have little vapor.

From what has been said about the climate it is plain that the inhabitants of this continent must be found chiefly in the eastern



FIG. 207.

A picture of a part of Jerusalem.

and southern parts. There they live in vast numbers along the coast and by the large rivers: in fact, nearly one-half of all the people in the world are found in these regions.

South-western Asia. — Rome and Athens have been mentioned as cities that have had a great influence upon other countries. But the part of the world which has probably had the greatest influence of all is that at the eastern end of the Mediterranean Sea. Here is the land that used to be called Palestine, the home of the Jews; and here is still the city of JERUSALEM (Fig. 207), near which Christ was born about nineteen hundred years ago,

and in which He was crucified. The Christian churches and Christmas are in His memory. The home of Christ, where the Christian religion was founded, is now a part of the Turkish empire which extends into Asia.

Turkey extends down the western coast of the Arabian peninsula, and includes another famous city, called MECCA. The Turks are not Christians but Mohammedans, or followers of Mohammed, who was



FIG. 208.

The home of a group of Persian nomads.

born at Mecca nearly fourteen hundred years ago. The Mohammedans believe in God, and their holy book is called the Koran. A great many other people in Asia and northern Africa are followers of Mohammed.

The western part of Asia, including Turkey, Arabia, and Persia, has a very dry, arid climate. This is particularly true of Arabia, which is mainly a desert plateau much more arid than Spain.

In this desert country agriculture is not a very important industry; but dates and coffee are raised there, especially near the rivers and along the coast. You have

perhaps heard of MOCHA coffee, and if you look on the map you can find the place from which it gets its name.

Although so much of this region is desert, there are places, called *oases*, where water is found. As these are usually too small to furnish water and grass for large herds during a long time, the Arabs are forced to wander from place to place, having no fixed homes. On that account they are called *nomads* or wanderers (Fig. 208). They take special pride in raising horses, which have become famous throughout the world. They also keep cattle, sheep, goats, and camels.



FIG. 209.

A Siberian three-horse waggon.

Much of Persia is also a desert; but some parts are well suited for grazing, and the climate is warm enough for such fruits as figs and dates. What is the capital? The ruler of the Persians is a despot called the *Shah*.

The people of these countries are not civilized enough to carry on much manufacturing, although beautiful carpets, rugs, and shawls are made in great numbers, especially in Persia and Turkey. This work is done by hand, and though it is well done, it requires a great deal of time, while in our great factories carpets are quickly made by machinery. Railways are almost unknown, and even carriage roads are usually lacking. Goods are carried upon camels in groups, called *caravans* (Our Home, Fig. 69, p. 72), and men travel upon the backs of horses and camels.

Siberia.—Siberia belongs to Russia. It is a region of extensive plains and is much larger than the whole of Russia in Europe. Like the northern regions of the Dominion much of it is so cold that few people can live there, and it has been made a prison for many Russians who have committed crimes, or who have offended their despotic rulers.

A large portion of south-western Siberia is a desert having numerous lakes without outlets. Would you expect them to be salt or fresh?



FIG. 210.

Houseboats on the Tientsin River of China.

Between this arid section and the bleak northern plains, or tundras, which resemble those of northern Europe, is a region where there are extensive forests, and broad plains suited for grazing and farming.

One of the chief sources of wealth of Siberia is in the gold mines of the Ural Mountains. Graphite, from which the "lead" in lead pencils is made, is also found there. Many of the prisoners from Russia are compelled to work in these mines.

Near Baku, on the Caspian Sea, petroleum is found in large quantities, similar to the oil from the wells of Ontario and the United States.

The Russian government has built a great railway all the way from St. Petersburg eastward to VLADIVOSTOK and to PORT ARTHUR in China on the Pacific coast. How far is that?

The Chinese Empire and Korea.—Some of the most im-

portant arts that we have ever learned first came from the Chinese. For instance, they made porcelain dishes long before Europeans knew how to do so, and on that account those dishes are still called *china-ware*, even though manufactured in other countries. They invented gunpowder, and our fire-crackers for the Queen's birthday used to come from China. They also discovered how to make silk and paper, and they invented the art of printing.

But while this strange-looking, yellow race was once among the foremost nations of the earth, it is now very much behind. This is explained partly by the fact that their religion causes them to worship their ancestors, so that whatever their fathers did, they must do. Since their



FIG. 211.

Temple in Peking.

fathers had no railways, telegraphs, or telephones, none are wanted now. Owing to their fear of new things, few of them have travelled abroad, nor have they allowed foreigners to visit them.

But recently many Chinese have come to this country and to the United States, working as servants, especially on the Pacific coast, and as laundrymen in all parts of the country. Besides that, they now allow foreigners to live in some of their coast cities and trade with the people.

CANTON, in the southern part, larger than any city on this continent, except greater New York, and SHANGHAI, a city twice the size of Montreal, are the principal ports for foreign trade. HONGKONG, an island at the mouth of the

Chu-Kiang, near Canton, belongs to Great Britain. The principal town is VICTORIA. The steamships from Vancouver call here.

Much of the northern and western portions of the Chinese Empire are so high and dry that few persons can live there. Find the names of those parts. But the lower plains near the coast, especially the fertile flood plains and deltas of the great rivers, support a vast population, because the soil is fertile, and abundant rain-fall is supplied by the damp winds from the Pacific. Here live nearly one-fourth of all the inhabitants of the globe, crowded together so closely that many thousands dwell in boats on the rivers.



FIG. 212.

A Japanese woman being carried in a travelling chair by two Japanese men.

are important products. China produces more raw silk than any other country in the world. What other regions are noted for these same products?

The government is an absolute monarchy, with the capital at PEKING, which, like TIENTSIN, its seaport, is more than three times as large as Montreal. The government is so weak and corrupt that European nations are able to seize and hold parts of the country, so that the once great empire is in danger of being destroyed and the different parts made subject to various European nations.

Here live nearly one-fourth of all the inhabitants of the globe, crowded together so closely that many thousands dwell in boats on the rivers.

In the northern part a great deal of wheat is raised; but farther south, rice, millet, tea, and silk

KOREA is also a very unprogressive nation, similar in manners and customs to China, which, until recently, would not permit foreigners to enter their land.

Japan. — The Japanese live upon islands east of Asia, as the British do west of Europe. Their territory is but slightly larger than the British Isles, and the inhabitants are not much more numerous. The islands are numerous



FIG. 213.

Scene in a Japanese village.

but mostly small. There are five large ones, the southernmost being Formosa. They are really the crest of a mountain range rising above the sea, and some of the mountain peaks are volcanoes.

The Japanese used to be much like their neighbors, the Chinese: that is, they believed in ancestor worship, and wanted to have nothing to do with foreigners. But, since 1858, when a revolution occurred, Japan has shown a most remarkable power of adopting western knowledge and experience. Very soon after that event the Japanese not only

allowed foreigners to enter their country, but invited them to come as teachers, and even sent some of their own young men abroad to study.

By treaties with Great Britain, the United States, and other countries, many ports are now open to foreign trade, and the Canadian Pacific steamships from Vancouver call at Yokohama and other ports on their way to Shanghai and Hongkong in China.

The result is that Japan is now far in advance of China, and in

fact of all other parts of Asia. Railways, telephones, and newspapers are common, and there are many good schools, while rapid progress has been made in manufacturing.



FIG. 214.

The way Japanese babies are carried by the young girls. The baby leaning back is asleep.

ever they make they try to make beautiful, being one of the most artistic races in the world.

Japan, like China, produces large quantities of silk, rice, and tea. There is also considerable mining.

The principal city and capital is TOKIO, which is twice as large as Liverpool in England, and is the home of the emperor, called the *Mikado*. Its seaport is YOKOHAMA, a city as large as Toronto.

That the Japanese are very skilful in many kinds of handiwork is suggested by the Japanese fans, parasols, napkins, dolls, and screens so often seen in this country. What-

XXVII. INDIA AND INDO-CHINA

INDIA, the central one of the three peninsulas on the southern side of Asia, is the country that Columbus thought he had reached when he discovered America. Hence the name "Indians" for the savages whom he met.

The greater part of this vast country, including India and Burma, is now under the influence and government of Great Britain.

From it our late Queen Victoria received the title of "Empress of India," and our present king is "Emperor of India" as well as "King of Great Britain and Ireland and of the British dominions be-



FIG. 215.

Idols in a cave near Bombay.

beyond the seas." It contains a population three times as great as the whole continent of North America, and next to China is the most populous country in the world.

Great ranges of mountains separate the peninsula from the rest of Asia. What are their names? These can only be traversed by two or three passes, the most noted of which is the **KHAIBAR PASS**, on the north-west. South of the fertile plains, or valley of the Ganges, the country forms a low table-land, bordered by the eastern and western Ghats (an Indian word meaning "stairs").

The damp winds from the Indian Ocean, called "monsoons," furnish the plains and mountains of India with so much rain that in places the forests form a perfect tangle or *jungle* of luxuriant vegetation, in which live tigers, elephants, and many other wild animals. Have you ever read Rudyard Kipling's "Jungle Book," which tells of this region? Should these winds fail during the season, the country is liable to fearful drought and famine.

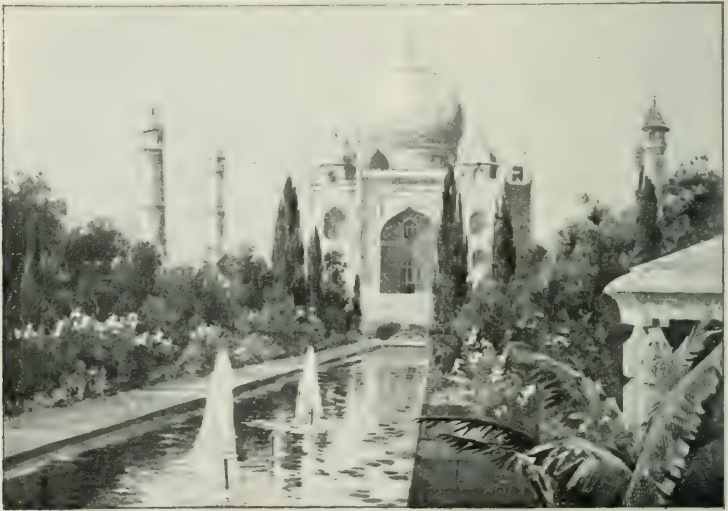


FIG. 216.

The Taj-Mahal at Agra.

Several very large rivers rise in the Himalayas and flow across the plains. One is the Indus, from which the words India and Hindustan come, and also the word Hindus, as the inhabitants are sometimes called. The river flowing south-east is the sacred river of the Hindus, the Ganges, on which is BENARES, the holy city of the Hindus, and CALCUTTA, the capital and largest city of India. What other great river joins the Ganges near its mouth? The next city in size on the eastern coast is MADRAS, far to the south, while the largest city on the west side is BOMBAY, which has the best harbor of all.

The government is administered by a Viceroy and council, whose residence is at Calcutta. A large army is maintained, composed largely of native troops, with British officers. These native soldiers are called "Sepoys."

The Hindus are great architects and have built many wonderful palaces and temples; one of the most beautiful is the Taj-Mahal (Fig. 216) at Agra, the mausoleum, or tomb, of the Great Mogul (the title of the former great native ruler in India). Under British influence great progress has been made in the country, — roads, railways, and irrigation works have been built, and manufactures established. One great railway extends from Bombay to Calcutta. How far is that?

One advantage to Great Britain, in the possession of India, consists in the important products of the country. Cotton, one of the principal, is shipped to Britain to be made into cloth, and then some of this cloth is shipped back to India and sold there. Where else have we found a similar situation?

Rice is the most important product of India and forms the largest item of export. It is also the staple food of the people.

Wheat is another great product, and since Britain does not produce enough of that food for home use, much has to be imported from abroad, and India supplies the largest amount next to the United States. Other crops are poppies, from which opium is made, silk, jute, tea, coffee, millet, and indigo.

The peninsula east of India, called Indo-China, and the East Indian Islands south of it, are other places that Columbus wished to reach. Here are found precious stones, pepper, such spices as nutmeg and cinnamon, and other valuable products, which were carried

by caravans to Europe long before the time of Columbus. Many of these products are now shipped from SINGAPORE, a strongly fortified city belonging to Britain. It is situated on an island at the southern end of the Malay peninsula, and is one of the most busy seaports in the world. The greatest city in Indo-China is BANGKOK, the capital of the kingdom of Siam. MANDALAY is the capital of Burma, and RANGOON the seaport, from which much rice is exported. BURMA and the STRAITS SETTLEMENTS belong to Great Britain.

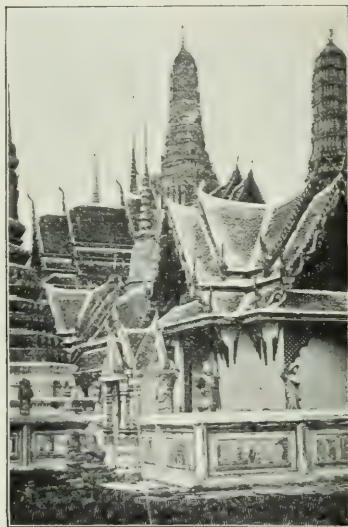


FIG. 217.

A view in the palace grounds at
Bangkok, Siam.

East of Siam is French Indo-China, a province belonging to France, of which SAIGON is the capital.

Ceylon. — South-east of India is the Island of Ceylon, the “Garden of India,” almost joined to the mainland by a coral reef and rocky islands, called “Adam’s Bridge.” It is a colony of Great Britain, and is famous for its

lovely scenery, its precious stones, and tropical products. It exports great quantities of tea, coffee, quinine, cinnamon, and other spices. COLOMBO, a city one-half the size of Montreal, is the capital.



FIG. 218.

Picking tea in the Island of Ceylon.

Steamships come from Britain to Bombay, to Colombo, and to other Indian ports through the Suez Canal. Trace their course on the map, Figure 204.

XXVIII. AFRICA

MAP QUESTIONS. — (1) What continent does Africa most resemble in shape? (2) In what parts are the chief mountain ranges? (3) Find the main slopes on the continent by a study of the rivers? (4) Name and trace the three largest rivers. (5) About how much of Africa lies in the torrid zone? (6) How does its coast line compare with that of Europe as to regularity? (7) What influence must that have upon the harbors?

The Dark Continent. — Although Africa is so near Europe that they almost join at the Strait of Gibraltar, and although it is one of the oldest continents that history tells about, it is the least known of them all.

There are several reasons for this. In the first place, south of the Mediterranean Sea is a broad desert, extending entirely across the continent. This, a part of which is called the Sahara Desert (Our Home, Fig. 69), is about a thousand miles wide, and very difficult to cross.

South of this desert for more than a thousand miles the country is covered with a forest where the rainfall is heavy; and near the equator the vegetation is so rank that an almost impenetrable jungle is formed, like that of the Amazon. It is inhabited by large and fierce animals, such as the elephant, tiger (Fig. 20), and lion.

The rivers offer further obstacles to travel. The continent is mainly a plateau, varying from one-fourth to one and one-half miles in height; and its rivers on approaching the ocean have numerous rapids and falls, so that boats cannot make their way continuously up-stream.

Not only are there deserts, unnavigable rivers, and dense forests with fierce animals, but there are hordes of savages



FIG. 220.

The Great Pyramid and the Sphinx. What animals are those standing on the desert sands near the Sphinx?

belonging to the black race. It was from Africa that *negroes* were first brought to this continent as slaves, and on that account those now here are often called Africans.

Here, then, are several reasons why we know so little about Africa, which, because of this, and because so many blacks live there, is sometimes called the "dark continent."

Northern Africa. — The African side of the Mediterranean Sea, being so close to Asia and Europe, has long been settled by the white race. Many of the inhabitants

are Arabs, who, being believers in Mohammed, still make pilgrimages to Mecca in Arabia, like other followers of that prophet.

The best-known country in this section is Egypt, and



FIG. 221.

A fleet of Egyptian boats on the Nile.

CAIRO, its capital, is the largest city in Africa, being about the same size as Boston in the United States. ALEXANDRIA is the chief Egyptian port.

This is the country over which the Pharaohs, the kings of Egypt, used to rule; and the ruins of the immense pyramids and monuments that they built thousands of years ago may still be seen. Here, the Bible tells, Moses once lived, and Joseph also. What stories do you remember about them?

Most of Egypt is a desert country, like Arabia on the one side and the Sahara Desert on the other. The Nile

River flows through this desert, and every year the heavy floods from the mountains of Abyssinia and the forest country near the equator, cause it to rise higher and higher until it overflows its banks. These floods, spreading out over the flood plain and level delta of the Nile, irrigate the land.

As in other rivers, the water carries with it an abundance of mud, which settles in a thin layer of rich soil upon the flood plain, making it so fertile that excellent crops of cotton, sugarcane, and grain can be raised after the water is gone. By this



FIG. 222.

Climbing the pyramids.

means millions of people obtain food, although they live in a desert region. A great dam is now being built across the upper Nile, to regulate the water-supply and irrigation.

The eastern part of Egypt includes the isthmus of Suez, which connects Africa with Asia. Because of this narrow neck of land, ships sailing from Europe to Asia were compelled to go all the way round Africa; but in 1869 a canal one hundred miles long was completed across the isthmus, so that vessels can now make a short cut. Estimate how many miles are saved by the Suez Canal in going from London to Calcutta.



FIG. 223.

A ship passing through the Suez Canal.

Egypt is nominally governed by the *Khedive*, who owes allegiance to the Sultan of Turkey, but it is, in fact, governed by a British official, under the authority of the British Government.

Name the countries west of Egypt along the Mediter-

anean coast. What are their capitals? Tripoli and Barca, like Egypt, are nominally tributary to Turkey. ALGERIA is a province of France, which country also controls the greater part of the Sahara Desert. MOROCCO is an independent absolute monarchy, governed by a Sultan. Their products are similar to those on



FIG. 224.

An Egyptian woman and children.

the northern side of the Mediterranean. What are some of them ?

The Moors, who form the largest part of the population of northern Africa, are a mixed race of Arabic origin. They formerly controlled Spain, but were finally conquered

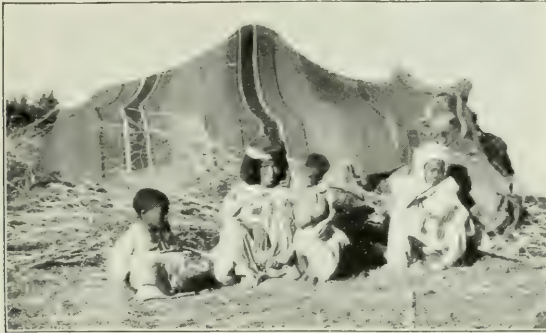


FIG. 225.

A family camped on an oasis in the desert of Morocco.

and driven from there the year before Columbus discovered America.

On the desert of Sahara few people are able to live. Some parts are sandy plains, while others are rocky and hilly, and in places even mountainous. But here and there, as in Arabia, are *oases* where water comes from underground, so that grass and date palms are able to grow. Sometimes these oases are so large that villages are built upon them; and the caravans that cross the desert to bring ivory and other products from the south, make their stops at these places. Some of these caravans consist of hundreds of camels, so that there is need of much food and water.

Central Africa. — Until a few years ago this was a wilderness that no civilized man had ever visited; but now much of it has been explored. The natives are mainly

savage blacks: and the Arabs, who go there to purchase ivory, still carry large numbers of them away as slaves.

The northern part is called the Sudan. Near the borders of the Sahara the country is a desert; but this condition

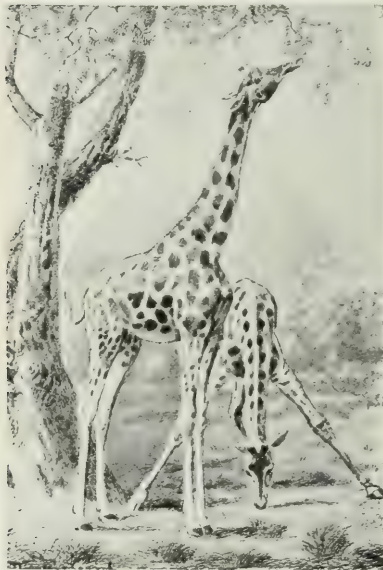


FIG. 226.
Giraffes feeding.

gradually changes until, farther south, the land is covered with a dense tropical forest, for the rains are heavy near the equator. In this region live the lion, rhinoceros, giraffe, and elephant, the latter being killed for the sake of its ivory tusks. Some of the forest woods are valuable, and since the rubber tree flourishes there, as along the Amazon, rubber is another product (see p. 143).

The two great rivers of this region are the Niger, north of the equator, and the Kongo, south of it. They are the main roads leading inland, although their falls and rapids greatly interfere with travel. Throughout that entire region there are no waggon roads, so that goods must be carried either on the rivers or over paths or trails in pack trains. But this situation is improving as the nations of Europe obtain more and more control. At the present time, several European countries claim parts of Africa, Great Britain having the largest share, as you will see from the map, and they are introducing civilized laws, railways, and other improvements.

The KONGO FREE STATE, a vast tract of land four times

the size of Ontario, has sprung out of the discoveries of Sir Henry Stanley. It is founded on the principles of free trade, and is recognized by the leading powers of Europe and by the United States. It is under the presidency of the King of Belgium, and will probably be made a Belgian colony.

Abyssinia. — This is a mountainous territory in the east, and is the only central African country where the natives are at all civilized and partially Christianized.

W. H. Miller

XXIX. SOUTH AFRICA: CAPE COLONY,
NATAL, TRANSVAAL COLONY, ORANGE
RIVER COLONY, ETC.

Southern Africa is the best developed section of the continent. It was originally settled by the Dutch, though the greater part has now come under the control of Great Britain. Part of it is a high plateau, with a warm temperate climate, having many of the same products as this continent. Most of the people are engaged in farming and ranching, producing grain, wool, and hides. Wool is one of the principal articles of export. Ostrich farming is also an important industry in Cape Colony, the beautiful feathers of the male bird being very valuable.



FIG. 227.
A group of ostriches in South Africa.

W. H. Miller

The dominant native races are various tribes of Kaffirs, a warlike people, far superior to the negroes of Central Africa. There are also some Hottentots, a stunted race, but they are gradually disappearing.

Portions of South Africa have been long settled by Europeans, and are divided, as you will see by the map, between the British, Germans, and Portuguese. The larger part, as well as the most valuable, belongs to Great Britain. CAPE COLONY and NATAL are British colonies, having their own governments as in



FIG. 228.

Kaffirs, South African savages, in full dress.

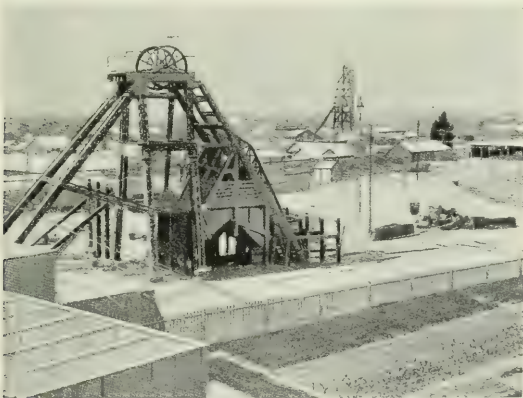


FIG. 229.

A picture of the De Beers diamond mine at Kimberley.

Canada. The other parts of British South Africa are still under the direct control of the Imperial Government, but

as in the case of our Territories, will be formed in course of time into separate self-governing colonies.

The TRANSVAAL and ORANGE RIVER COLONIES were



FIG. 230.

A view in Cape Town. The Government buildings;
Table Mountain in the background.

until lately independent Dutch Republics. They declared war against Great Britain, and attempted to raise an insurrection in Cape Colony, but failed in their object.



FIG. 231.

Johannesburg in 1899.

These republics have now been made into British colonies under the direct control of the British government. The people of these republics are generally called *Boers*, which is the Dutch word for farmer.

A railway is now in course of construction by Great Britain from Cape Town in Cape Colony to Cairo in Egypt. How will this compare in length with the Canadian Pacific Railway (see p. 94)?

CAPE TOWN is the capital of Cape Colony and the principal seaport and centre of commerce.

JOHANNESBURG is the centre of the richest gold-mining region in the world, and more diamonds are obtained from near KIMBERLEY than from any other part of the globe. PIETERMARITZBURG is the capital of Natal, and DURBAN the chief seaport.

Islands near Africa. — The large island of MADAGASCAR is two hundred and forty miles from the mainland, and is five times as large as Newfoundland. It is chiefly inhabited by a tribe of Malays, called *Hovas*, but is controlled by France. What is the chief town? What islands near Madagascar belong to Britain? What islands are near the west coast of Africa? To whom do they belong? ST. HELENA is noted as having been the prison home of Napoleon Bonaparte, and later of many of the Boers from the Transvaal and Orange Free State in Africa.



FIG. 232.

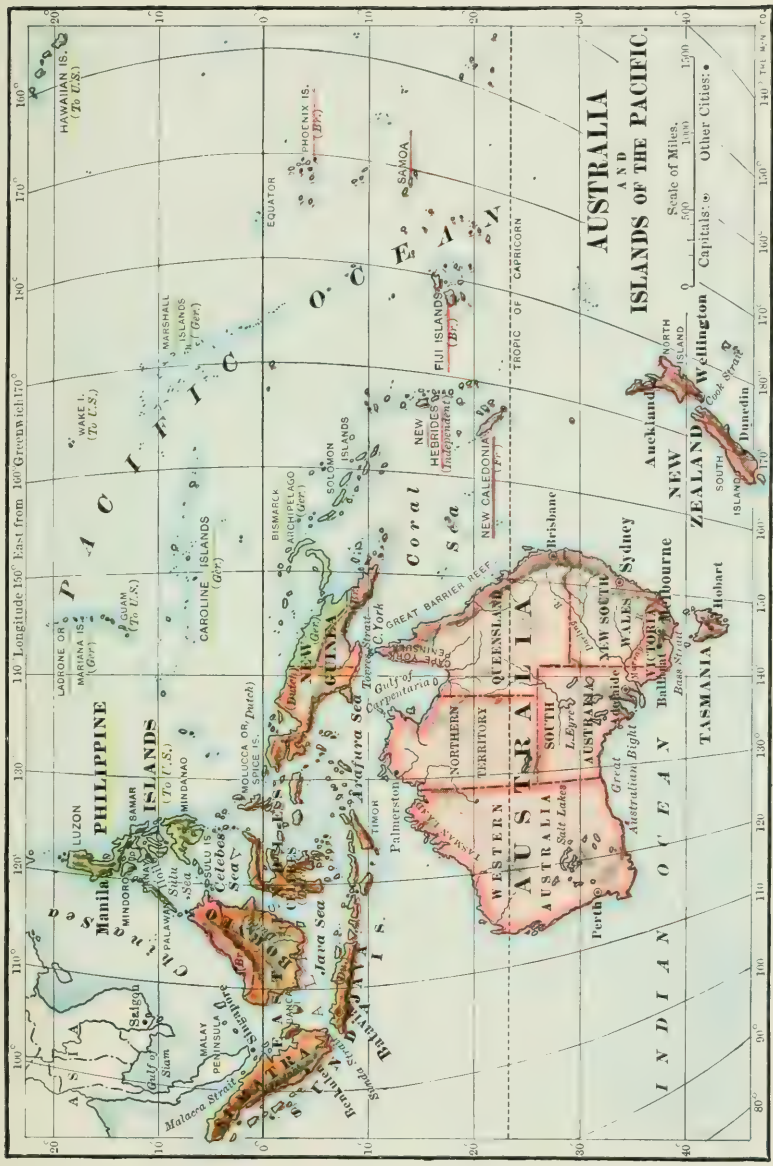
Travelling in a jinricksha at Durban.

XXX. THE COMMONWEALTH OF AUSTRALIA, NEW ZEALAND, THE EAST INDIES, PHIL- IPPINES, AND THE OTHER ISLANDS OF THE PACIFIC

MAP QUESTIONS. — (1) Find Australia on a globe and show how you would reach it from Halifax in a vessel. Through what waters would you pass? (See Fig. 30.) (2) From Vancouver? From London? (3) In what part are most of the mountains? (4) The rivers? (5) The cities? (6) In what zones is Australia? (7) Will there be any cold winter on this continent? (8) Look on a globe, or on map, Fig. 30, to see what other continents are in the same zones. (9) Which are the principal islands of the East Indies? Find Batavia. (10) In what direction are the Philippine Islands from Australia? (11) Estimate the distance. (12) What is the capital of the Philippine Islands? (13) Find the Hawaiian Islands.

The Commonwealth of Australia. — This is another important part of the British Empire, or Greater Britain. The whole of the colonies of the great island continent of Australia were formed in 1901 into a Confederation, similar to that of Canada. Name these colonies from the map. Name their capitals and tell where they are situated. In the commonwealth is also included the Island of Tasmania, south-east of Australia. What is the capital?

Australia is the smallest of the continents, being rather less in size than Canada, or about the size of the United States, not including Alaska. It is a low plateau, with



110° Longitude 150° East from 160° Greenwich 170°

160°

170°

180°

170°

160°

150°

140°

130°

120°

110°

100°

90°

20°

10°

0°

10°

20°

30°

40°

50°

60°

70°

80°

90°

HAWAIIAN IS.
(To U.S.)

WAKE I.
(To U.S.)

LADRONE OR
MARSHALL IS.
(Ger.)

GUAN
(To U.S.)

PHILIPPINE ISLANDS
(To U.S.)

MARSHALL ISLANDS
(Ger.)

PHOENIX IS.
(Br.)

SAMOA
(Br.)

FIJI ISLANDS
(Br.)

NEW CALEDONIA
(Fr.)

NEW ZEALAND
(Br.)

HEBRIDES OR
FETTERBURN IS.
(Independent)

SOLOMON ISLANDS
(Ger.)

BISMARCK

AICHPELAGO
(Ger.)

NEW GUINEA
(Ger.)

NEW SOUTH WALES
(Br.)

QUEENSLAND
(Br.)

VICTORIA
(Br.)

WESTERN AUSTRALIA
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the chief mountain range close to the eastern shore. These mountains have much influence on the climate; for, since the prevailing winds are from the south-east, as they reach this range, and rise to pass over it, they grow cooler and lose most of their moisture. If the mountains were on the western side, as the Andes are in South America,



FIG. 234.

A forest of tree ferns in Australia.

nearly the whole country might be well watered, like the Amazon Valley. As it is, however, the eastern coast of Australia has abundant rain, while farther westward it becomes drier, until, at a distance of one hundred and fifty miles from the coast, farming is almost impossible.

Surface. — What about the country farther west? With what part of Africa should it be compared? Where must the chief rivers be? Where might we expect to find salt lakes? The best farm land? The principal cities and most of the people?

Now examine the map to see if you are right. Where is the large desert? (It is dotted.) What is the name of the main river? There is often so little rain, even on the lower part of the Murray River Basin, that the river grows smaller toward its mouth; and its chief tributary, the Darling, dries up almost entirely.



FIG. 235.

A sheep run in Australia. The water in this artesian well rises from a layer of porous rock over six hundred feet below the surface.

Lakes are numerous, but nearly all are salt, and indeed scarcely deserve the name of lake, as they are dependent on the rivers and floods. At one time they form immense reedy swamps: at another, vast areas of submerged flats, with broad mud banks for shores that render the water quite unapproachable. Why are these lakes salt?

In many districts artesian wells have been sunk (Fig. 235), and these supply abundant water. In Queensland there are over 350 of these.

Plants and Animals.—When the British began to colonize this country, they found it inhabited by a very low class of savages; and the plants and animals were different from those in other parts of the world. A great part of the interior was covered with a low bush, called “scrub,” having hard, prickly leaves and often growing so dense that it was difficult for one to make his way through it. It caused the country to look desolate indeed.

Almost all the trees are evergreens. Some have vertical leaves, which cast no shade, and shed their bark instead of their leaves. The characteristic trees are the eucalyptus or gum tree, which does not grow in dense forests, but thinly scattered over the surface; and the acacia or wattle, the leaves of which have shrunk to thorns.

There are none of the fierce animals common to other countries. The largest is the kangaroo, which is furnished with a sack or pouch for carrying its young. Instead of running on all fours, it jumps along on its hind legs, using its tail for support (Fig. 236).



FIG. 236.

An Australian kangaroo.

Finding the native plants and animals of little use, the settlers began to import some. Sheep were taken there and found to thrive; for the temperature is so mild that they are not exposed to cold, and some of the plants furnish excellent food. Consequently, great sheep ranches or *sheep runs*, as they are called there, have been estab-

lished. The best sections for this purpose are Victoria and New South Wales, where wool has become one of the



FIG. 237.

An Australian sheep run.

chief exports. Indeed, Australian wool is the best in the world.

The imported cattle have likewise multiplied, so that hides and meat are produced in abundance. Wheat and corn also flourish, and many fruits, such as we know, are now plentiful in that region.

Amongst other animals imported into Australia, the rabbit is one which has multiplied to such an

extent as to become a pest. Owing to the ravages these animals commit in the pastures, the governments of the colonies have been obliged to offer rewards for their destruction.

Coast Line. — You will notice that the coast line is but little broken, except by the two great indentations, the Gulf of Carpentaria and the great Australian Bight, which, being opposite to each other, would seem to divide the continent into eastern and western portions. In the north-east is the Great Barrier Reef (Fig. 238), extending for about 1000 miles, at an average distance of about 30 miles from the coast.



FIG. 238.

Patch of corals on the great Barrier Reef of Australia.

Mining.—The presence of mountains suggests that metals might exist there, which is the case. For many years Australia has ranked as one of the most important gold-producing countries of the world.

The discovery of gold in Australia (1851), shortly after the discovery of the same precious metal in California, led to a great immigration from Great Britain. The necessity of providing provisions for the miners next led to the introduction of cattle and sheep and to farming. Many shiploads of frozen beef and mutton are now being sent continually to Great Britain.

Since these industries have become very extensive, especially in the rainy south-eastern part, we see why several great cities have grown up in that section. The largest is MELBOURNE, the capital of Victoria, which is more than twice as large as Montreal. The next is SYDNEY, the capital of New South Wales, nearly as large; and the third is ADELAIDE, the capital of South Australia.

Manufacturing is not yet greatly developed, so that quantities of wool, hides, metals, etc., are exported, going mainly to Great Britain. Some of the imports that must be received in return you can probably name.

The **New Zealand Islands** belong to Great Britain but are not included in the Commonwealth of Australia. The climate and the industries of the people resemble those of Australia, and the exports are also similar. What is the capital? What other cities are found there? Do you remember the geysers for which the Yellowstone National Park is noted (p. 126)? New Zealand and Iceland are the only two other parts of the world where geysers are found.

The New Zealand Islands are mountainous, and contain much beautiful scenery. They are nearly as large as the British Islands.

Although comparatively so near to Australia, the native plant and animal life are different, there being no native tree like the eucalyptus, nor animals like the kangaroo.



FIG. 239.

A group of Maoris in New Zealand.

The native inhabitants, called Maoris (Fig. 239), are also of a much superior race to the native Australians.

The East Indies. — Between Australia and Asia are a large number of Islands, many of them too small to place upon the map. What are the names of some of the largest of this group, or archipelago, known as the EAST INDIES? The one that you have probably heard about most often is JAVA, from which the Java coffee comes.

The British possessions in these islands are: the small island of LABUAN, off the north-west coast of Borneo, and parts of BORNEO and NEW GUINEA. Among the forests of these islands are many different kinds of valuable tropical woods. Sugar, tobacco, pepper, spices, and precious stones are other valuable products.

These islands, like those of the Japanese Empire, are the crests of mountains in the sea. Among them are

many very active volcanoes, some of them having caused terrible destruction by their frightful eruptions. In the south are the loftiest peaks, crowned with perpetual snow. The islands belong to European countries, and you will find the names of these countries marked on the map.

There is a large native population, chiefly Malays, in all the islands, but the whole white population in the Sunda Islands (Dutch) does not exceed 70,000.

The Philippine Islands.— These islands were taken possession of by the United States during the late war with Spain, and the principal city is MANILA, on Luzon Island, where the United States fleet under Admiral Dewey destroyed the Spanish fleet.

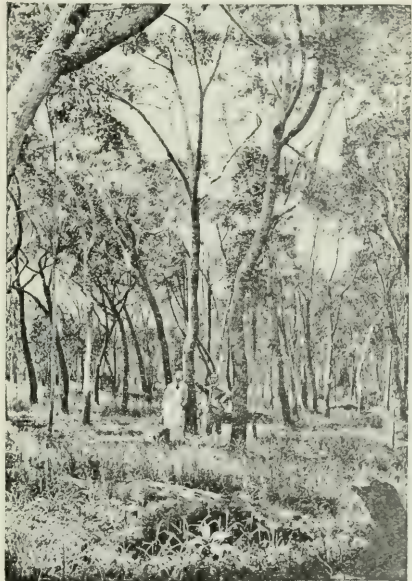


FIG. 204.

A grove of quinine (Peruvian bark) trees in the island of Java.

Notice (Fig. 204) that they lie between the Japanese Islands and the East Indies, both of which were said to be mountain ranges in the sea. The Philippines are also mountains, forming a part of the same chain.

There are valuable kinds of wood in the forests, and many mineral deposits; but these were never much used by the Spaniards. The chief products have been sugar,

tobacco, and hemp, which is used in making ropes. It is probable that now their mineral and other resources will be developed.

On these islands dwell several different races. There are still many savages there, especially in the dense forests of the interior (Fig. 8). Some of them are called Negritos, or little negroes. On the Sulu Islands are Mohammedans,

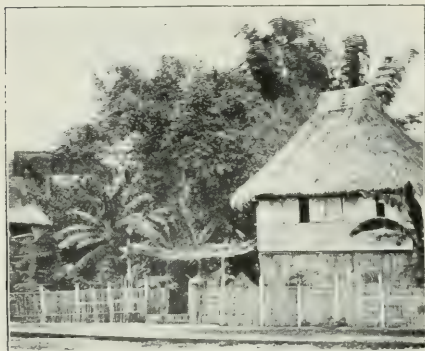


FIG. 241.

A native house in Manila. In order to be well above the damp ground, the people live in the upper part. Notice the bamboo fence.

called Moros. The Tagalogs belong to the more advanced tribes, who have learned some of the arts of civilization from the Spaniards.

Islands of the Pacific. — There are many hundreds of islands in the Pacific Ocean, some of them being tiny coral islands, others large and mountainous. They

are all located where mountain ranges or volcanic peaks rise from the great plain of the ocean floor.

Find the position of the **FLJI ISLANDS**. They are also British. What other groups of small islands do you see in that region? What large island is just north of Australia? In what zone does it lie? One part is British, one part Dutch, and one part German. All of its products are tropical, and it is covered with a dense forest and inhabited by fierce savages. Very few Europeans live there.

Among the islands of the Pacific we must not forget to mention the HAWAIIAN ISLANDS, which belong to the United States. They are situated in the mid-Pacific on the way from Vancouver to Australia, and consist of a number of islands, the largest being Hawaii. All of them are volcanic, and on Hawaii are two of the largest volcanoes in the world (Fig. 10). Being in the torrid zone, their climate is warm enough for sugar raising, and this is one of the principal industries of the islands. Where else have we found this industry? HONOLULU is the capital and largest city. The steamships to and from Australia and Vancouver call here.

FANNING ISLAND, a small island belonging to Great Britain, and situated south of the Hawaiian Islands, is to be a station for the Pacific telegraph cable between Vancouver and Australia.

REVIEW QUESTIONS

I. FORM AND SIZE OF THE EARTH

REVIEW QUESTIONS. — (1) What did people formerly know about the shape of the earth? (2) What is its form? (3) Tell the story of Columbus. (4) Why did he call the savages Indians? (5) Why was the land he discovered called the New World? (6) Tell about Magellan's voyage. (7) Explain why the earth does not appear to us to be a sphere. (8) What is the diameter of the earth? The circumference? (9) The latter is how many times the former?

SUGGESTIONS. — (1) Read something about the life of Columbus. (2) Read about Magellan. (3) Find the names of some other early explorers and read about them. (4) Trace Columbus's journey on a globe to see where he actually went. Find India in order to see where he thought he had gone, and notice how one can go to India by traveling eastward as well as westward. (5) Make a sphere in clay. Measure its diameter with a needle. (6) How many proofs can you find that the earth is round? Find out how we know that it is like a ball and not like a cylinder. (7) Write a story about Columbus. (8) Trace on a globe the route followed by our soldiers who went to South Africa. How many days are required for such a journey? (9) Obtain a telescope or an opera-glass and look through it at the moon.

II. DAILY MOTION OF THE EARTH AND ITS RESULTS

REVIEW QUESTIONS. — (1) What motion has the earth? (2) What is the axis of the earth? (3) The north pole? The south pole? (4) Represent the axis and poles by using an apple. (5) Walk toward the north pole. Toward the south pole. (6) What is the equator? (7) How long does it require for the earth to turn com-

pletely around once? (8) What rate of travel is that for a point upon the equator? (9) Why are we not thrown away from the earth? (10) Give several examples showing what is meant by gravity. (11) In what direction is the earth rotating? (12) How does that explain sunrise and sunset? (13) What causes night? (14) What would be the result if the earth did not rotate? (15) When it is noon here, what time is it on the other side of the earth? (16) How long must the day and night together last? Why?

SUGGESTIONS. — (1) Point out the axis of a wheel; of a top; of a rotating ball; of a spinning globe. (2) Mark the two poles on an apple or ball, and then a line for the equator. (3) Mould a sphere in clay, and show the poles and the equator. Cut it in halves, and mark a line for the axis. (4) Find exactly how many miles a point on the equator moves each hour. (5) Use a horse-shoe magnet to attract pieces of iron. (6) Use a globe, or apple, and a lamp to show why the sun appears to rise and set, and why it is day on one side while it is night on the other. (7) Watch the stars in the east some night, to see which way they appear to move. (8) Why do not the clouds appear to move westward also? (9) Is the sun always shining during the day? Why, then, do we not always see it? (10) Who was Atlas? Who was Aurora? (11) Find out what the ancients supposed became of the sun each night. (12) When it is noon here, what time is it one-fourth of the distance around the earth to the east? To the west?

III. THE ZONES

REVIEW QUESTIONS. — (1) What is the cause for the great heat in the torrid zone? (2) What are its boundaries? (3) What other zones are there? What are their boundaries? (4) In which direction does the midday sun lie in each zone? (5) In which direction do the shadows then fall? (6) Why should the heat grow less, the farther one travels from the equator? (7) Why has no one ever been able to reach either pole? (8) Which part of the earth has no cold weather? (9) Which part has no hot weather? (10) Point out the zones in Figure 7. (11) Represent them in a drawing of your own. (12) Name the hemispheres and tell where each is.

SUGGESTIONS. — (1) Find out more about the reason why the sun's rays are hotter when the sun is overhead than when it is low in the

heavens. (2) Write a story telling about the changes in clothing you would need to make in passing from the north to the south pole. (3) In which direction would you look to see the sun at noon on such a journey? (4) How might the changes in heat affect the growth of trees and other plants? (5) How would the direction of your shadow change? Its length? (6) If there were no watches or clocks, how could you tell the time of day from the sun? (7) Find out about some of the men who have tried to reach the north pole. (8) In which zone should you prefer to live? Why? (9) Explain how some places in the temperate zone are warmer than some in the torrid zone.

IV. HEAT WITHIN THE EARTH AND ITS EFFECTS

REVIEW QUESTIONS.—(1) What is known about the temperature of the earth below the surface? (2) What does that suggest? (3) What other proof of this conclusion is there? (4) What is a volcano? (5) What is the crust of the earth? (6) What happens as the interior cools? (7) Compare this with the drying of an apple. (8) How have the ocean basins and continents been formed? (9) What do fossils in the rocks prove?

SUGGESTIONS.—(1) Collect pictures of volcanoes; of earthquakes. Read about some volcanic eruption. (2) Make a drawing of a volcano. (3) Dry an apple and notice the change. (4) Not all rocks contain fossils; but examine those in your section to find if they do. (5) If you live near a beach, notice how shells are covered by the sands. (6) If a mine were a mile deep, what would be the temperature at the bottom, if the average temperature at the surface is 45°?

V. THE CONTINENTS AND OCEANS

REVIEW QUESTIONS.—(1) Name the five continents, counting Eurasia as one. (2) Write their names. (3) Walk toward each of them. (4) Tell what you can about each. (5) Where is the Arctic Ocean? The Antarctic? (6) Tell something about the people and animals of the Arctic region. (7) What oceans touch North America? (8) Name five oceans. Which is the largest? (9) How deep is the ocean water? (10) Name some of the animals that live in it. (11) What are the conditions on the ocean bottom? (12) In what

ways are islands in the open ocean formed? (13) Explain how coral islands are made.

SUGGESTIONS. — (1) Make an outline drawing of each of the continents. (2) Of each of the oceans. (3) Collect pictures of the animals, people, and scenery of the different continents. Many such pictures are printed in the magazines. (4) Write a story about one of the pictures. (5) Write a story about something that you have learned concerning one of the continents. (6) Obtain pieces of coral for the school collection. (7) Study the maps, Figs. 28, 29, and 30, to learn more about the continents and oceans.

VIII. THE DOMINION OF CANADA

REVIEW QUESTIONS. — (1) Who were the first settlers in Canada? (2) Where were settlements made? (3) How far did the explorations of the early French pioneers extend? (4) How did Canada come into the possession of Great Britain? (5) What event caused a large increase in the early population of the country? (6) What part of the continent did Canada occupy when it came into the possession of the British? (7) What part was included in Acadia? (8) When was the Dominion of Canada formed?

SUGGESTIONS. — (1) Write a short description of the gradual formation of the Dominion. (2) Find out what you can about Jacques Cartier, Wolfe, Montcalm, and other historical characters connected with Canada.

IX. THE ATLANTIC PROVINCES

REVIEW QUESTIONS. — (1) Who was the first navigator, of whom we have a record, to visit Nova Scotia? (2) What nation first made a settlement there? (3) How was the country named? (4) Describe the fortress at Louisburg. (5) Why is it an advantage that the coast is so irregular? (6) Why cannot vessels go up the rivers of the Atlantic Provinces? (7) For what are the rivers useful? (8) Mention some of the large seaports. Why are they important? (9) What fisheries are important? Name some of the principal ports for fishermen. (10) What are diked lands? (11) What can you tell of mines and minerals in Nova Scotia? (12) Why is it important to have coal

mines near iron mines? (13) Name some of the shipping ports for timber — for deals. (14) How can you reach Prince Edward Island in winter time?

SUGGESTIONS. — (1) Read the story of "Evangeline" and the Acadians. (2) Find out where the scenes described there occurred. (3) Find out what you can about lumbering. Look up pictures illustrating the work. (4) Go into a fish store to see a cod, mackerel, halibut, salmon, etc. (5) Get some specimens of iron and other ores. (6) Get up a school collection of minerals. (7) What minerals can you name? Are any of them found in your province? (8) Explain the ebb and flow of the tide; why are they greater in one place than in another?

X. PROVINCES OF THE ST. LAWRENCE RIVER SYSTEM

REVIEW QUESTIONS. — (1) What is meant by the St. Lawrence River System (see *Our Home*, p. 45)? (2) What position does Quebec occupy in this system? Ontario? (3) What effect has the position of these provinces on the rivers? (4) How is this advantageous for manufacturing? (5) Name some of the rivers that furnish water-power. (6) Where is the highest navigable point in the St. Lawrence River System? (7) For what is Fort William important? (8) What precious metal is found in the Rainy River District, near the Lake of the Woods? (9) What other minerals are found in the St. Lawrence River Basin? Where? (10) What are the principal points in the St. Lawrence River Basin for lumber? For pulp wood? For square timber? (11) What are the most important industries of Ontario? (12) What products are pumped from wells in western Ontario? (13) How do railway trains pass the rivers between the Great Lakes? (14) What canals must you pass through between Montreal and Fort William? (15) Name the largest cities of Ontario; of Quebec. (16) What river joins the St. Lawrence at Montreal? (17) For what is Ottawa noted? (18) For what is the city of Quebec noted? (19) What islands are in the Gulf of St. Lawrence? (20) What large island at the mouth of it?

SUGGESTIONS. — (1) Describe the lake fisheries and the fish found there. (2) Make a collection of Ontario and Quebec minerals. (3) Find out to how many uses the nickel from the mines of Sud-

bury can be put. (4) Make a collection of different woods and get pictures illustrating the growth of the trees and their appearance. (5) Write a description of the Algonquin Park. (6) Describe a trip through the islands of the Georgian Bay; through the Lake of a Thousand Islands. (7) Visit a cheese factory and creamery. (8) Tell how a raft passes the Chaudière Falls on the Ottawa River at Ottawa. (9) Write an account of how a vessel passes through a canal. (10) What is the chief difficulty in building a canal? (11) Describe salmon fishing. Give an account of the Labrador and Gulf fisheries.

XI. MANITOBA AND THE NORTH-WEST TERRITORIES

REVIEW QUESTIONS.—(1) Compare the size of Manitoba and the North-West Territories with the Eastern Provinces. (2) What about the number of people there? (3) Why are there so few there? (4) How are the North-West Territories governed? (5) Where are most of the people to be found? (6) What great enterprise was necessary in order to open up the country? (7) What is the chief attraction that draws people to this country? (8) Name some of the animals of the North-West. (9) Tell something of the lakes of Manitoba. (10) Where is Winnipeg situated? (11) Give a reason for its importance. (12) Where is cattle-ranching carried on? (13) Why is that part of the country favorable for raising cattle? (14) Name the principal towns for the cattle trade. (15) What great trading company formerly occupied all this country? (16) Tell something about the Indians of the North-West;—about the fur trade. (17) Tell what a visitor may see at the Rocky Mountain Park. (18) What Provisional Districts are there in the North-West? (19) Describe the “Barren Lands.”

SUGGESTIONS.—(1) Write a story describing a journey from Winnipeg to the Rocky Mountains. (2) How did people formerly travel in summer?—In winter? (3) Describe a journey from York Fort to Fort McPherson. (4) What is the distance from Winnipeg to Calgary? (5) What stories have you read about the fur traders?—About the Hudson's Bay Company?—About the Indians? (6) Write to the office of the Canadian Pacific Railway Company for their illustrated circulars, in which are many views of western scenery.

XII. BRITISH COLUMBIA AND YUKON TERRITORY, THE FAR NORTH AND GREENLAND

REVIEW QUESTIONS (Map, Fig. 34). —(1) What is the chief feature of the scenery of British Columbia and the Yukon Territory? (2) Describe the principal mountain ranges. (3) Where is farming carried on? (4) What are the products? (5) What is said about inland navigation? (6) What is the great attraction that brings people to this country? (7) Describe gold mining in British Columbia. (8) What other minerals are found there? (9) Where are the principal mining centres?—The principal coal mines? (10) How is coke produced? (11) Why are the coal mines of British Columbia important? (12) Describe the course of the Canadian Pacific Railway. (13) Why is the railway of great value to British Columbia? (14) How do the trees of this part of the country compare with those in the eastern provinces? (15) Where is H. M. dry-dock situated? (16) What is the principal fishing industry? (17) How are the fish shipped away? (18) What foreign commerce is carried on from Victoria and Vancouver? (19) Where is the seal fishing in the Pacific carried on? (20) What is the Klondike region famed for? (21) How much gold has been taken out of this region in one year? (22) How is the climate there? (23) How can you get from Dawson to Victoria? (24) What is the district in the far north called? (25) What people live there? (26) Describe Greenland.

SUGGESTIONS.—(1) Write an account of climbing a high mountain (see *Our Home*, p. 20). (2) What stories have you read of mountains? (3) Make a list of articles made of gold; of silver; of copper; of lead. Collect some ores of these for your school. (4) Make a drawing of the Pacific coast; of the Yukon territory. (5) Visit a fish market to see some salmon; or, find a picture of one in the dictionary. (6) Write an account of what you know about the salmon. (7) What have you read about coal mines? (8) How are icebergs formed? (9) Write an account of the Eskimos. (10) Why is there so much ice in Greenland and in the Arctic regions? (11) Draw a map of Canada, showing the Provinces, Territories, and the capitals of each. (12) Write the abbreviations used for each Province or Territory in addressing a letter.

XIII. NEWFOUNDLAND

REVIEW QUESTIONS.—(1) On what industry does Newfoundland chiefly depend? (2) What currents meet at Newfoundland? (3) Where are the Banks of Newfoundland formed? (4) What are the principal fisheries? (5) Why is the harbor of St. John's important? (6) How is the interior of the island being developed?

SUGGESTIONS.—(1) Write an account of what you know about cod fishing on the Banks of Newfoundland; about the seal fishery. (2) What is the difference between the seals of Newfoundland and those of the Pacific Ocean (see p. 131)? (3) Can you tell anything of the discovery of Newfoundland?—Of the early navigators who came there from Europe?

XIV. THE UNITED STATES OF AMERICA

XV. NEW YORK AND THE NEW ENGLAND STATES

REVIEW QUESTIONS.—(1) To what country did the United States originally belong? (2) How have they increased their territory? (3) What people originally settled New York State? (4) In what way does the coast resemble Nova Scotia? (5) Why is this an advantage? (6) Mention some of the largest cities? (7) Describe New York, and how it has grown so large. (8) Tell what you can about farming in these States; about lumbering; about manufacturing. (9) Why cannot vessels go up the New England rivers? (10) Why are many manufactories on these rivers? (11) Name some of the principal manufacturing cities; the principal shipping ports; the principal fishing and lumber ports.

SUGGESTIONS.—(1) What do you know about the early struggles between the French of Canada and the British of these States? Of the war for Independence? (2) Who were the Puritans?

XVI. ATLANTIC STATES SOUTH OF NEW YORK

REVIEW QUESTIONS.—(1) Describe the coast line of these States. (2) Name the chief seaports. (3) What reasons can you give for the growth of these cities? (4) What has made the iron manufactures so important in Pennsylvania and in Alabama? (5) Name the

principal cities for the manufacture of iron. (6) Where are coal and petroleum chiefly found? (7) For what industry is Richmond noted? (8) Name the principal cotton shipping ports. (9) What is the capital of the United States? (10) Where is it situated?

SUGGESTIONS. — (1) Write an account of the cotton plant; of the tobacco plant. (2) Visit a cotton-mill, if there is one in your neighborhood. (3) Make a list of the different articles made of cotton. (4) Where does rice grow? (5) What people are the principal laborers in these States? Have you read "Uncle Tom's Cabin," and of the war that made all the slaves free? (6) Find out some facts about Washington and the people that live there. (7) On the map (Fig. 136) there are abbreviations such as Del., Md., Mass., Conn., N. Hamp., N.J., because there is not room for the complete names. What do these stand for? (8) Tell what you know about the fruit from Florida and why it is cultivated there.

XVII. THE MISSISSIPPI VALLEY

REVIEW QUESTIONS. — (1) How far does the Mississippi Valley extend north and south?—East and west? (2) What other great valleys have you learned about, similar to this, although not so great? (3) What are the principal products of this great valley? (4) How do they change as you go south from Manitoba? (5) Where are the chief centres for milling?—For cattle? (6) Name some of the large cities on the Great Lakes; on the Ohio, Missouri, and Mississippi rivers. (7) What is the seaport of the Mississippi Valley? (8) What minerals are found in the northern part of this valley?

SUGGESTIONS. — (1) Find out about sugar and sugar-cane. From what root is sugar extracted equal to that from sugar-cane? (2) Visit a flour-mill and see the process of making flour. (3) Find out how cattle are shipped to Europe; about refrigerator cars; and cold storage. (4) How are grain and cotton packed for shipment across the ocean?

XVIII. THE WESTERN STATES

REVIEW QUESTIONS. — (1) Compare these States with British Columbia. (2) Name the principal mountain ranges. (3) What can you tell about farming in these States?—About mining?—About

ranching? (4) What metals are found in the West? (5) Where is each found? (6) What city have the Mormons built? (7) Why cannot the whole desert be irrigated? (8) Where is Los Angeles? (9) Where is the Yellowstone National Park?—The Colorado Canyon? (10) What is a peculiar feature of the Yellowstone National Park? (11) What are the chief products of California? (12) What seaports are on the Pacific coast? (13) Where are they situated? (14) What large river rises in British Columbia and flows into the Pacific between Washington and Oregon? (15) For what fishery is it noted?

SUGGESTIONS. — (1) What stories have you read about the Rocky Mountains?—About the Western Indians? (2) Find out something about the Yosemite Valley in California; about the Yellowstone National Park. (3) Write to the Northern Pacific Railway at St. Paul, Minn., or to the Atchison, Topeka, and Santa Fé Railway at Chicago, Ill., for their illustrated circulars, in which there are many views of Western scenery. (4) Make a drawing of the Pacific Coast, showing the cities. Add the rivers. (5) Find out what large animals live among the mountains.

XIX. ALASKA

REVIEW QUESTIONS (Fig. 31). — (1) Where is Alaska situated? (2) How was it obtained by the United States? (3) In what zones is it? (4) What is done there?

SUGGESTIONS. — (1) Draw the Yukon River. (2) Find out something about a journey to the Klondike. (3) Read something about the fur-seal. (4) Compare it with the Newfoundland seal.

XX. MEXICO AND CENTRAL AMERICA

REVIEW QUESTIONS. — (1) Tell about the climate and relief of Mexico. (2) About the industries. (3) About the products. (4) About the inhabitants. (5) What cities are there? (6) What is the form of government? (7) How is the capital situated? (8) For what is Central America important at present?

SUGGESTIONS. — (1) What reason can you see for digging the Nicaragua Canal at the place where it is shown on the map?

(2) Why are there no large rivers in Mexico? (3) Read an account of the conquest of Mexico by the Spaniards.

XXI. THE WEST INDIES AND BERMUDA ISLANDS

REVIEW QUESTIONS. — (1) Describe the West Indies. (2) Which was the first land discovered by Columbus? (3) What are the chief products of the West Indies? (4) Of what race are most of the inhabitants? (5) What two negro republics are found in the West Indies? (6) Tell what you can about Cuba and Porto Rico; about Jamaica; about Trinidad; about Barbados; about the Bermuda Islands.

SUGGESTIONS. — (1) At what time of the year would it be best for people to visit these islands? (2) What have you already learned about the cultivation of sugar-cane and tobacco? (3) Why is Bermuda of importance to Great Britain? (4) Describe a field of Easter lilies; a sugar plantation; a banana tree.

XXII. SOUTH AMERICA

REVIEW QUESTIONS. — (1) Describe the highland regions of South America. (2) What three great valleys are there? (3) In what zones are the different parts of the continent? (4) Which is the rainiest region? Why? (5) What about the rainfall elsewhere? (6) Compare Brazil with Canada in size and number of inhabitants. (7) Tell about the silvas and the valuable products obtained from them. (8) Where are the chief cities in Brazil? Which is the largest? (9) Name the main industries in that section. (10) Where is Venezuela? (11) Tell about the industries there. (12) Where is Caracas? (13) For what is Trinidad noted? (14) Which is the most productive part of South America? What are the products? (15) Name and locate the largest city on the continent. (16) Name the countries along the western side of South America. (17) Why are most of the cities not directly on the coast? (18) Which is the largest port? (19) What are the products of these countries? (20) What part of South America and what islands near the coast belong to Great Britain?

SUGGESTIONS. — (1) Draw the outline of South America. Put in the drawing the mountains, chief rivers, and cities. Add the country

boundaries. (2) Make a sand model of the continent, showing the highlands and lowlands. (3) What large cities were found in the interior of North America? How about South America in that respect? What are the causes for the difference? (4) Brazil is in the torrid zone, while the United States is in the temperate zone. Which country has the advantage in temperature? Why? (5) Write a story telling of a journey by land and river from the mouth of the Orinoco to the mouth of the Plata. (6) Find some pictures from South America and add them to the school collection. (7) Read something about coffee culture. Read about Pizarro; about Bolivar. (8) From the table on pages 242, 243, etc., find the five largest cities in South America. Add the populations together and compare the result with the total of the five largest cities in North America (see p. 241, etc.). (9) The Hartford Rubber Works Company issues a pamphlet with illustrations of rubber making. You could probably obtain one if you wrote for it to the Toronto Tire Company at Toronto or Montreal.

XXIV. THE BRITISH ISLES

REVIEW QUESTIONS.—(1) What are the divisions of the British Isles? (2) Where is each? (3) Why have not the British Isles a colder climate? (4) Why are they favorably situated for commerce? (5) Tell about the commerce of Great Britain; about London; about the government. (6) Of what value are the coal and iron mines to Great Britain? (7) Where are the chief iron industries carried on? (8) Where is coal shipped from? (9) Name some of the principal seaports. (10) Tell about agriculture; about manufacturing. (11) Name some of the principal centres for manufacturing. (12) Tell about Ireland. (13) How have the British come to be such a manufacturing nation? (14) How have they come to have so many ships?—So many colonies? (15) Name all the colonies you have learned about in the Western Hemisphere. (16) What fortresses does Britain possess to protect her commerce in the Mediterranean Sea?

SUGGESTIONS.—(1) What British navigators and explorers have you read about? (2) Make a list of all the articles you can think of that have come from Great Britain. Tell, if you can, from what port. (3) What books have you read that were written by British authors? (4) Describe the British form of government.

XXV. OTHER COUNTRIES OF EUROPE

Norse Countries. QUESTIONS. — (1) What about the climate of Norway and Sweden? (2) Tell about the agriculture; the other industries. (3) Which are the Norse nations? (4) What colonies have the Danes? (5) Name the chief industries of Denmark. (6) What kind of government have these Norse countries, and what is the capital of each? (7) What is the most northerly point of Norway? The most northerly town in Europe?

SUGGESTIONS. — (8) Find out something about Iceland. (9) In what other section that you have studied is fishing important? (10) Find out about the length of days and nights in Norway. (11) Draw a map of the Scandinavian peninsula. (12) Of what parts of Canada do the fiords of Norway remind you?

Russia. QUESTIONS. — (1) Tell about the size of Russia. (2) What parts of Russia in Europe are not fitted for farming? Why? (3) What is the main occupation of the people? Name the important products. (4) What are the tundras? — The steppes? (5) Which is the largest river in Europe? (6) Where are the leading Russian ports? (7) Locate three of the largest cities, and state for what each is important. (8) Tell about the government; about the great mass of the people.

SUGGESTIONS. — (9) Why would you not expect Russian sailors to be as numerous as the British sailors? (10) Name some city of Canada which is about as far south as Odessa. (11) How does the northern location of St. Petersburg interfere with its commerce by sea? (12) What cape in Labrador is as far north as St. Petersburg? (13) Show the route a vessel would take in going from Odessa to London; from Odessa to St. Petersburg.

Germany. QUESTIONS. — (1) Where is the highest land in Germany? The great plains? (2) Tell about the chief farm products. (3) What are the principal manufactures in Germany? (4) Where is Hamburg? (5) What advantage has it as a seaport? (6) For what is Berlin noted? Leipzig? Munich? Dresden? Locate each. (7) Tell about the government.

SUGGESTIONS. — (8) Do you know any songs or stories about the Rhine River? (9) Make a drawing showing the course of this river.

(10) Do you know of any German paintings? Of any music written by Germans? (11) Make a collection of German pictures.

Holland. QUESTIONS. — (1) Tell about the dikes and canals of Holland. (2) What is the principal industry? Why? (3) What important colonies has Holland? (4) Which are the main cities?

SUGGESTIONS. — (5) Write a story telling what you think might result if a dike were to give way. (6) Find a picture of a Dutch windmill. (7) Tell what you would expect to see in crossing Holland on a railway train.

Belgium. QUESTIONS. — (1) What are the farm products of Belgium? (2) Tell what you can about flax. (3) Name and locate the two principal cities. (4) What about coal and iron?

SUGGESTIONS. — (5) Examine a piece of Brussels carpet; a piece of lace also.

France. QUESTIONS. — (1) Describe the chief slopes of France. (2) What are the products in the northern part? In the southern part? (3) Tell about the silk industry. (4) What can you say about the capital? (5) About any of the other cities? (6) What kind of a government has France?

SUGGESTIONS. — (7) Examine a cocoon and a piece of silk. Obtain a caterpillar, if possible the silkworm, and raise it in the school, to see how the silkworm forms silk and what happens to the "worm." (8) Why would the value of a cocoon be destroyed if the chrysalis inside were to break through in order to get out? (9) Can you find any pictures of Paris? (10) Write an account of Jacques Cartier's voyage from St. Malo.

Spain and Portugal. QUESTIONS. — (1) Where are the Pyrenees Mountains? (2) Tell about the former power of these countries. (3) Describe the relief and climate. (4) What are the industries on the plateau? (5) What minerals are found there? (6) Where is most of the farming? What are the chief products? (7) Name and locate the most important coast cities; the two capitals. (8) What islands belong to Spain and Portugal? (9) From where did Columbus start in his voyage to discover America?

SUGGESTIONS. — (10) Would you expect the rivers to be navigable for any considerable distance from the Spanish coast? Why?

(11) Make a sand map of Spain, showing the high and low land. (12) Examine some quicksilver. For what is it used? (13) Can you find out anything about the Moors and the Alhambra in Southern Spain? Perhaps you can find pictures from there. Washington Irving has written some beautiful stories about the Alhambra.

Italy. QUESTIONS. — (1) Where is Rome? Venice? Naples? Mt. Vesuvius? Milan? (2) Tell something about each of these. (3) Where are the mountains? (4) Where is the Po Valley? (5) What is cultivated in Italy? (6) What islands form part of the kingdom of Italy?

SUGGESTIONS. — (7) Find pictures of some of the ruins in Rome. (8) Of some of the buildings in Venice. (9) Look on a globe to see in which direction Rome is from New York (or see maps, Figs. 30 and 173). (10) Draw a map of Italy.

Switzerland. QUESTIONS. — (1) What are some of the industries of the Swiss? (2) What languages are spoken? (3) Name the principal cities. (4) What is the kind of government?

SUGGESTIONS. — (5) Read the story of William Tell. (6) Find other stories about Switzerland. (7) What disadvantage do you see in having so many languages? (8) What large rivers rise in Switzerland? (9) Write a story describing a visit to the Alps. You will get some suggestions from Figure 19, page 20, also from Our Home, Figure 15, page 17, and Figure 20, page 22.

Austria-Hungary. QUESTIONS. — (1) Name four leading cities in Austria-Hungary. (2) Tell why each is important.

SUGGESTIONS. — (3) Trace the Danube River from its source to its mouth. (4) How far is Trieste from Venice? (5) Through what waters would a vessel pass in sailing from Halifax to Trieste? (6) By using the scale on the map, find out how far Vienna is from London; from Munich; from Leipzig; from Berlin; from Paris; from St. Petersburg. (7) In what direction is it from each of these?

Greece. QUESTIONS. — (1) What can you say about the influence of Greece upon the world? (2) Find Athens. (3) Tell about the climate and products.

SUGGESTIONS. — (4) Where can you read about Ulysses? (5) Have some one tell you the story of the Trojan War. (6) Find some other stories about the ancient Greeks.

Turkey. QUESTIONS. — (1) Where is Turkey? What is its capital? (2) Tell about its government. (3) What is the chief occupation of the people? (4) What countries have gained their independence from Turkey? (5) How is the Black Sea connected with the Mediterranean?

SUGGESTIONS. — (6) What is the boundary between Turkey in Europe and Turkey in Asia? (7) Examine a Turkish rug. (8) What reasons can you give why Russia would like to own Constantinople?

GENERAL SUGGESTIONS. — (1) Do you know of any persons who have come from one of these countries of Europe? If so, ask them to tell you about them. Also have them speak in their native language. (2) Ask your storekeeper to show you some goods from Europe. (3) What difficulties would you expect to meet if you were to travel through Europe without knowing any foreign languages? (4) Bound each of the countries of Europe. (5) Draw an outline map of Europe, putting in these boundaries and the principal rivers. (6) Make a dot to represent a large city. Mark the capitals with stars. (7) Collect pictures of Europe for the school collection. (8) Cut out scraps from the magazines and papers, relating to the people, animals, plants, cities, etc., of different parts of Europe, and present them to the school to be kept for use in the geography class. They can be arranged by countries and will be very useful.

XXVI. ASIA

South-western Asia. QUESTIONS. — (1) What part of Asia has had the greatest influence on the civilized world? Tell about it. (2) To what nation does Palestine belong? (3) What other parts of Asia belong to it? (4) Tell about Mecca. (5) Describe Arabia. (6) How do the Arabians live? (7) What do you know about Persia? (8) How do people travel in those countries?

SUGGESTIONS. — (9) What is meant by the date 1900? (10) What buildings in your neighborhood have been erected in the memory of Christ? (11) What stories in the Bible have you read that tell about places mentioned in this book or on the map? (12) What reasons can you suggest why the Turks have not taken possession of the interior of Arabia, as well as of the coast? (13) Does your grocer

sell Mocha coffee? (14) Examine a Persian or Turkish rug. (15) Learn how camels are especially fitted to live in desert countries.

Siberia. QUESTIONS. — (1) Point toward Siberia. (2) Tell about the climate. (3) In what occupations are the people engaged? (4) How does Siberia compare in size with Russia in Europe?

SUGGESTIONS. — (5) What advantage will the railway be to Russia? (6) How does that railway compare in length with the Canadian Pacific Railway? (7) What object do you see in having the terminus, Port Arthur, so far south?

Chinese Empire and Korea. QUESTIONS. — (1) Name some of the arts that we have learned from the Chinese. (2) What has made them so backward? (3) What special ports are open to foreign traders? (4) In what part of China do most of the people live? Why there? (5) What are the principal products? (6) What kind of a government has China? (7) Tell about Korea.

SUGGESTIONS. — (8) How can you distinguish a Chinaman from other men? (9) How does the number of people in China compare with the number in the whole of Europe? (See table on pp. 235, 236.) (10) Write a story telling some of the differences between life in Canada and in China. (11) Draw the two chief rivers in China. (12) How might railways in China help to prevent the awful famines that they have there? (13) Find out about Confucius; about the great wall of China.

Japan. QUESTIONS. — (1) Where is Japan? (2) What islands of Europe compare with Japan? How? (3) In what way were the Japanese like the Chinese? (4) How have they differed? (5) Why are they called an artistic race? (6) What are their products? (7) Name and locate the chief cities.

SUGGESTIONS. — (8) Make a collection of Japanese articles, as paper napkins, fans, etc. (9) Examine them to see in what respect they are artistic. (10) Collect pictures of Japanese houses and people.

XXVII. INDIA AND INDO-CHINA

REVIEW QUESTIONS. — (1) To what nation does India belong? (2) What title does King Edward VII. take from India? (3) What mountains are in the north? (4) Which is the highest mountain in

the world (see p. 246)? (5) What rivers are in northern India? (6) Name the largest cities and give their position. (7) How is India governed? (8) What are the chief products? (9) What advantage does Britain enjoy by possessing India? (10) Name the peninsula east of India. (11) What part belongs to Britain?—To France? (12) Name the chief towns in Indo-China. (13) What comes from them? (14) Where is Ceylon? (15) What comes from there?

SUGGESTIONS.—(1) How far from India was Columbus when he discovered America? (2) What route should he have taken if he had continued his voyage to India? (3) What is the shortest route from London to Bombay? (4) How far is it from Bombay to Calcutta by rail? (5) Have you read of the relief of Lucknow and the siege of Delhi? (6) Read some of Kipling's stories of India.

GENERAL REVIEW.—(1) Draw an outline map of Asia, and put in the boundary lines of the principal countries; also, the rivers, mountains, and cities. (2) Find out about foreign missions in Asia.

XXVIII. AFRICA

REVIEW QUESTIONS.—(1) Why is so little known about Africa? (2) Why is it called the "dark continent"? (3) Which is the best known country in northern Africa? (4) Name and locate its two chief cities. (5) Tell about the Nile River. (6) About the Suez Canal. (7) About the Sahara Desert. (8) Where is the Soudan? What animals live there? (9) What two great rivers are in Central Africa? (10) How are goods carried from place to place? (11) What influence are the nations of Europe having upon Africa? (12) Describe the Kongo Free State.

SUGGESTIONS.—(1) What reasons can you give why Timbuktu should be an important trade centre? (2) The caravans composed of camels travel at the rate of about sixteen miles a day. How long would it probably take for a caravan to travel from Timbuktu to Tripoli on the Mediterranean coast? (3) One camel can carry about four hundred pounds. How many tons could a caravan of six hundred camels carry? (4) What are some of the dangers of a journey across the desert? (5) Beginning with the western Sahara, trace the desert country that extends across Africa and Asia. (6) Why should the two largest cities in Africa be located at or near the mouth of the

Nile River? (7) Find some object made of ivory and show it to the class. (8) Why are there no tributaries to the northern half of the Nile? What part of the river, then, probably has most water?

XXIX. SOUTH AFRICA

REVIEW QUESTIONS.—(1) What parts of South Africa belong to Great Britain? (2) Which have been recently taken possession of? (3) What climate has the country? (4) What are the principal products? (5) What valuable mines are there? (6) Name the capitals of the different British colonies. (7) What large river flows eastward? (8) Which westward? (9) What native race inhabits South Africa?

SUGGESTIONS.—(1) Find out about the war in South Africa with the Boers. (2) Why are there so few seaports in British South Africa? (3) Examine an ostrich feather and a diamond. (4) In sailing from Halifax to Cape Town what islands would you pass?

Draw an outline map of Africa, and put in the main divisions, rivers and cities.

XXX. THE COMMONWEALTH OF AUSTRALIA, NEW ZEALAND, AND ISLANDS OF THE PACIFIC

The Commonwealth of Australia. REVIEW QUESTIONS.—(1) Of what Empire does Australia form part? (2) How does it compare in size with Canada (see pp. 235, 236)? (3) How does the mountain range in the east affect the climate? (4) Which, then, is the most valuable part of the country? (5) How is the scarcity of water overcome? (6) Tell about the native plants and animals? (7) What animals and plants have been imported? (8) What industries have resulted? (9) Name the principal exports. (10) What peculiar formation is there on the north-east coast? (11) What first attracted people to Australia? (12) Name the chief cities and state where they are situated. (13) How is Tasmania situated? (14) What is the chief town?

SUGGESTIONS.—(1) Sketch Australia, showing the divisions, the Murray and Darling rivers, and the principal cities. (2) What other places in the world are noted for sheep and cattle raising? —(3) For gold mining? (4) Which form part of the British Empire?

(5) Read about the trouble imported rabbits have caused in Australia. (6) Where are the desert countries of the world?

New Zealand Islands. REVIEW QUESTIONS.—(1) How far is Auckland in New Zealand from Sydney in New South Wales? (2) What is one of the peculiar features of New Zealand? (3) What are the natives of New Zealand called? (4) What are the products?

SUGGESTION.—(1) Read the voyages of Captain Cook.

The East Indies. REVIEW QUESTIONS.—(1) Name some of the larger islands of the East Indies. (2) Find out to whom each of the larger islands belongs (see on the map, Fig. 233). (3) What are their products?

SUGGESTIONS.—(1) Why were they named the “East Indies”? (2) Find out what spices are used in cooking at your house. (3) Why was quinine called “Peruvian bark”? (4) There are volcanoes in these islands; are there any volcanoes in Canada? (5) Find out where the tea and coffee used at your home come from.

Philippine Islands. REVIEW QUESTIONS.—(1) To what country do these islands now belong? (2) Where are they situated? (3) Name the principal city. (4) How far is Manila from China? (5) What native races occupy the islands?

SUGGESTIONS.—(1) Collect some Manila hemp rope. (2) Find out about the battle of Manila Bay, and about the Filipinos.

Islands of the Pacific.—(1) Find the Fiji Islands. (2) What large island lies north of Australia? (3) Tell about it. (4) Tell about the Hawaiian Islands.

SUGGESTIONS.—(1) Find out something about the Fiji Islands. (2) About the Hawaiian Islands. (3) Tell why Honolulu is important. (4) Why Fanning Island is important. (5) How far is it from Vancouver to Sydney by way of Honolulu?

APPENDIX

CONTINENTS AND PRINCIPAL COUNTRIES

NOTE.—The figures 1897, 1900, etc., refer to the year in which the estimate was made. Most of the figures are obtained from the “Statesman’s Year Book” for 1901, and “Gotha Almanac” for 1901, or from the “Century Atlas.”

	Area in Square Miles		Population
NORTH AMERICA	8,025,594	1900	100,000,000
United States (with Alaska)	3,602,990	1900	76,150,768
Mexico	767,005	1895	12,619,959
Canada (without Franklin District)	3,606,546	1901	5,390,740
Central America	175,696	1897	3,271,426
SOUTH AMERICA	6,837,000	1897	40,000,000
Brazil	3,209,878	1892	18,000,000
Argentina	1,778,195	1895	3,954,911
Peru	449,000	1897	3,000,000
Chile	290,829	1895	2,527,320
EUROPE	3,850,000	1897	374,000,000
Russia	2,095,616	1897	106,159,140
German Empire	208,830	1900	56,345,014
Austria-Hungary	240,942	1900	47,013,835
France	204,092	1901	38,641,333
British Isles	121,377	1901	41,454,621
Italy	110,646	1900	32,100,000
Spain	197,670	1897	18,089,500
Turkey in Europe	66,500	1901	6,086,300

CONTINENTS AND PRINCIPAL COUNTRIES. (*Continued*)

	Area in Square Miles		Population
ASIA (with Islands)	17,255,890	1897	831,000,000
Chinese Empire	4,468,750	1897	303,241,969
India	1,700,000	1901	294,266,701
Japan	162,655	1896	43,759,577
Turkey in Asia	680,000	1900	16,333,000
Russia in Asia	6,369,685	1897	23,051,972
AFRICA	11,508,793	1897	170,000,000
Kongo Free State	900,000	1898	14,000,000
Egypt	400,000	1897	9,734,405
Cape Colony	277,077	1891	1,527,224
Natal	35,019	1900	929,970
Orange River Colony	48,326	1890	207,503
Transvaal Colony	119,109	1896	867,897
Rhodesia	750,000	1898	1,350,000
AUSTRALASIA	3,077,547	1901	4,604,130
Commonwealth of Australia	2,973,076	1901	3,788,310
New South Wales	310,700	1901	1,366,408
Victoria	87,884	1901	1,200,914
Queensland	668,497	1900	498,249
South Australia	903,690	1901	362,604
Tasmania	26,385	1901	172,475
Western Australia	975,920	1901	187,660
New Zealand	104,471	1901	815,820

SIZE OF THE EARTH

LENGTH OF THE EARTH'S DIAMETER at equator (miles)	7,926
LENGTH OF THE EQUATOR (miles)	24,902
THE EARTH'S SURFACE (square miles)	196,940,000
Pacific Ocean (square miles)	55,660,000
Atlantic Ocean (square miles)	33,720,000
Antarctic Ocean and the great Southern Sea surrounding the south pole (square miles)	30,605,000
Indian Ocean (square miles)	16,720,000
Arctic Ocean (square miles)	4,781,000
The Sea	141,486,000

AREA AND POPULATION OF CANADA — 1901

	Square Miles	Population
Dominion of Canada	3,606,546	5,390,740
British Columbia	383,300	177,272
Manitoba	73,956	254,947
New Brunswick	28,200	331,120
Nova Scotia	20,600	459,574
Ontario	220,000	2,182,943
Prince Edward Island	2,000	103,259
Quebec	347,350	1,648,898
Northwest Territories	555,640	158,940
Unorganized Territories	1,775,200	52,709

POPULATION OF THE PRINCIPAL CANADIAN CITIES
AND TOWNS — 1901

Montreal	267,730	Valleyfield	11,055
Toronto	208,040	Ste. Cunegonde	10,912
Quebec	68,840	Three Rivers	9,981
Ottawa	59,928	Stratford	9,959
Hamilton	52,634	St. Catharines	9,946
Winnipeg	42,340	Sydney	9,909
Halifax	40,832	Berlin	9,747
St. John	40,711	St. Hyacinthe	9,210
London	37,981	Dawson	9,142
Vancouver	26,133	Belleville	9,117
St. Henri	21,192	Chatham, Ont.	9,068
Victoria	20,816	Moncton	9,026
Kingston	17,961	Brockville	8,940
Brantford	16,619	Westmount	8,856
Hull	13,993	Woodstock	8,833
Windsor, Ont.	12,153	Owen Sound	8,776
Charlottetown	12,080	Sarnia	8,176
Sherbrooke	11,765	Galt	7,866
Guelph	11,496	Levis	7,783
St. Thomas	11,485	Sault Ste. Marie	7,169
Peterboro'	11,239	Fredericton	7,117

POPULATION OF CANADIAN CITIES AND TOWNS, 1901. (*Continued*)

Sorel	7,057	Dartmouth	4,806
Lindsay	7,003	North Sydney	4,646
Glacé Bay	6,945	Ingersoll	4,573
Cornwall	6,704	Fraserville	4,569
New Westminster	6,499	New Glasgow	4,447
Yarmouth	6,430	Oshawa	4,394
Rossland	6,159	Niagara Falls	4,244
Nanaimo	6,130	Cobourg	4,239
Toronto Junction	6,091	Joliet	4,220
Truro	5,993	Trenton	4,217
Barrie	5,949	Port Hope	4,188
Collingwood	5,755	Goderich	4,158
Lachine	5,561	Calgary	4,152
Brandon	5,380	Hawkesbury	4,152
Nelson	5,273	Arnprior	4,150
Rat Portage	5,202	Petrolea	4,135
Spring Hill	5,178	Carleton Place	4,059
Pembroke	5,156	St. John's, Que.	4,030
Smith's Falls	5,155	Portage La Prairie	3,901
Amherst	4,963	Pictou	3,235
Orillia	4,907	Regina	2,645
Chatham, N.B.	4,868	Edmonton	2,626

SOME STATISTICS OF CANADIAN TRADE

Total Imports, 1901	\$ 190,415,525
Total Exports, 1901	196,487,632

SOME OF THE PRINCIPAL EXPORTS—1901

Provisions—cheese, butter, bacon, etc.	\$39,375,158
Animals—living	11,693,929
Hides, and manufactures of leather	4,612,051
Breadstuffs	19,042,950
Lumber, wood-pulp, and articles of wood	32,852,190
Metals—gold and silver	26,865,906

SOME OF THE PRINCIPAL EXPORTS—1901. (*Continued*)

Metals—iron, copper, nickel, lead, etc., manufactured and unmanufactured	£ 11,105,855
Coal and Coke	5,507,990
Fish	10,670,114
Fruit	2,010,879
Furs	1,659,547

VALUE OF THE FISHERIES OF CANADA—1900

Salmon	£ 3,893,217
Cod	3,614,775
Lobsters	3,055,350
Herring	1,853,237
Mackerel	1,549,448
Whitefish	705,323
Trout	657,248
Other Fish	3,562,906
Fur Seal (British Columbia)	562,845

MINERAL PRODUCTS OF CANADA—1901

METALLIC	
Gold	£ 24,462,222
Silver	2,993,668
Copper	6,600,104
Nickel	4,594,523
Lead	2,199,784
Pig Iron	1,974,397
	£ 42,824,698
NON-METALLIC	
Coal	£ 14,671,122
Coke	1,264,360
Petroleum and Natural Gas	1,265,774
Asbestos	1,186,434
Salt	262,328
Gypsum	340,148
Cement	630,030
Structural materials and clay products	5,831,231
Other non-metallic minerals	810,906
	£ 26,282,333

THE BRITISH EMPIRE

	Area in Square Miles	1901	Population
The British Empire	12,171,120	1901	395,960,000

EUROPE

THE BRITISH ISLES (including the			
Channel Islands and Isle of Man)	121,377	1901	41,454,621
England	51,000	1901	30,827,914
Wales	7,378	1901	1,698,161
Scotland	30,000	1901	4,472,000
Ireland	31,759	1901	4,456,546
EUROPEAN POSSESSIONS			
Gibraltar	2	1901	26,830
Malta and Gozo	125	1900	192,070

ASIA

Aden and Perim, Sokotra, etc.	1,467	1898	53,910
British Borneo, Labuan, and			
Sarawak	84,031	1898	688,411
Ceylon	25,365	1901	3,576,990
Cyprus	3,584	1901	237,022
Hong Kong	426	1898	334,400
India and Burmah	1,700,000	1901	294,266,701
Straits Settlements and Feudatory			
States	40,000	1898	1,567,967
Wei-hai-wei	270	1890	78,000

AFRICA

COLONIES			
Cape Colony	276,775	1898	1,787,960
Natal (with Zululand)	35,019	1900	929,970
Orange River Colony	48,326	1890	207,503
Transvaal Colony	119,109	1896	867,897
Basutoland	10,293	....	218,324
West Africa (Gambia, Sierra			
Leone, Gold Coast, and Lagos)	87,200	1900	3,650,000
Mauritius, etc.	1,085	1900	380,040
Seychelles Islands	148	1900	20,275

THE BRITISH EMPIRE. (*Continued*)

AFRICA — PROTECTORATES

	Area in Square Miles		Population
Rhodesia	643,000	1898	1,350,000
Central Africa Protectorate	58,000	....	1,000,000
East Africa Protectorate	270,000	....	2,500,000
Nigeria Protectorate	346,730	....	24,000,000
West Africa Protectorate	30,000	....	500,000
Central Africa (Uganda)	58,000	....	1,000,000

AMERICA

The Dominion of Canada	3,606,546	1901	5,390,740
Newfoundland	42,734	1898	208,000
Labrador (Dep.)	120,000	....	4,106
West India Islands	12,329	1898	1,442,829
Honduras	7,562	1891	31,471
British Guiana	109,000	1898	(est.) 286,484

AUSTRALASIA

Commonwealth of Australia	2,973,076	....	3,788,310
New Zealand	104,471	....	815,820

ISLANDS

South Sea Islands	22,311	....	330,000
Indian Ocean Islands	1,085	....	401,146
Atlantic Islands	4,894	....	25,140

SOME OF THE LARGEST CITIES OF THE WORLD

	Population
1. London, England, 1901	4,536,063
2. New York, United States, 1900	3,437,202
3. Paris, France, 1899	2,511,629
4. Canton, China	2,500,000
5. Berlin, Germany, 1900	1,884,345

SOME OF THE LARGEST CITIES OF THE WORLD. (*Continued*)

	Population
6. Chicago, United States, 1900	1,698,575
7. Vienna, Austria-Hungary, 1900	1,662,269
8. Tokio, Japan, 1900	1,507,557
9. Osaka, Japan, 1900	1,311,763
10. Philadelphia, United States, 1900	1,293,697
11. St. Petersburg, Russia, 1897	1,267,023
12. Calcutta, India, 1891	1,121,664
13. Moscow, Russia, 1897	1,023,817
14. Tientsin, China, 1898	950,000
15. Kioto, Japan, 1900	931,568
16. Peking, China, 1898	900,000
17. Constantinople, Turkey, 1885	873,565
18. Hankau, China, 1897	800,000
19. Bombay, India, 1901	770,843
20. Hamburg, Germany, 1900	768,349
21. Glasgow, Scotland, 1900	760,422
22. Buenos Aires, Argentina, 1898	753,000
23. Hangchau, China, 1898	700,000
24. Liverpool, England, 1901	684,947
25. Rio de Janeiro, Brazil, 1898	674,972
26. Fuchau, China, 1897	650,000
27. Buda-Pesth, Austria-Hungary, 1900	648,149
28. Warsaw, Poland, 1897	638,209
29. St. Louis, United States, 1900	575,238
30. Cairo, Egypt, 1897	570,062
31. Boston, United States, 1900	560,892
32. Manchester, England, 1900	543,969
33. Naples, Italy, 1897	536,673
34. Brussels, Belgium, 1897	531,611
35. Amsterdam, Holland, 1898	523,558
36. Birmingham, England, 1901	522,182
37. Madrid, Spain, 1887	513,000
38. Baltimore, United States, 1900	508,957
39. Rome, Italy, 1897	499,965
40. Melbourne, Australia, 1901	493,950

OTHER IMPORTANT CITIES

	Population
Aberdeen, Scotland, 1900	153,108
Adelaide, Australia, 1900	160,691
Agra, India, 1901	188,300
Albany, United States, 1900	94,151
Alexandria, Egypt, 1897	319,766
Antwerp, Belgium, 1897	271,284
Athens, Greece, 1896	111,486
Bahia, Brazil, 1890	174,412
Barcelona, Spain, 1887	272,481
Basle, Switzerland, 1901	113,000
Belfast, Ireland, 1901	348,965
Belgrade, Servia, 1901	72,000
Benares, India, 1901	203,095
Berne, Switzerland, 1897	49,030
Bordeaux, France, 1896	256,906
Bradford, England, 1900	279,807
Bremen, Germany, 1900	224,882
Breslau, Germany, 1900	422,415
Brisbane, Australia, 1901	119,428
Bristol, England, 1901	328,842
Bucharest, Roumania, 1897	250,000
Buffalo, United States, 1900	352,387
Callao, Peru, 1890	35,492
Cape Town, Cape Colony, 1891	51,251
Caracas, Venezuela, 1893	80,000
Cawnpore, India, 1901	197,000
Cettinje, Montenegro, 1897	2,300
Chemnitz, Germany, 1901	206,584
Christiania, Norway, 1901	227,600
Cincinnati, United States, 1900	325,902
Cleveland, United States, 1900	381,768
Cologne, Germany, 1896	321,564
Colombo, Ceylon, 1900	154,556
Copenhagen, Denmark, 1895	408,300
Damascus, Turkey, 1898	150,000
Delhi, India, 1901	208,385

OTHER IMPORTANT CITIES. (<i>Continued</i>)	Population
Detroit, United States, 1900	285,704
Dresden, Germany, 1900	395,349
Dublin, Ireland, 1900	373,179
Dundee, Scotland, 1900	160,871
Dusseldorf, Germany, 1900	214,000
Edinburgh, Scotland, 1900	316,479
Florence, Italy, 1898	212,898
Frankfort, Germany, 1900	288,500
Geneva, Switzerland, 1901	105,000
Genoa, Italy, 1898	232,777
Georgetown, British Guiana, 1891	53,176
Hanover, Germany, 1900	236,000
Havana, Cuba, 1899	235,981
Havre, France, 1896	119,470
Hobart, Australia, 1898	34,604
Hull, England, 1900	240,618
Hyderabad, India, 1901	446,291
Jerusalem, Turkey in Asia, 1885	41,000
Johannesburg, Transvaal Colony, 1896	102,078
Kimberley, Cape Colony, 1891	28,718
Kingston, Jamaica, 1898	46,542
Leeds, England, 1900	428,953
Leicester, England, 1900	211,574
Leipzig, Germany, 1901	455,090
Lille, France, 1896	216,276
Lima, Peru, 1891	103,956
Lisbon, Portugal, 1890	307,661
Lodz, Russia, 1897	314,780
Louisville, United States, 1900	204,731
Lucknow, India, 1901	263,951
Lyon, France, 1896	466,028
Madras, India, 1901	509,397
Malaga, Spain, 1887	134,016
Mandalay, Burma, 1901	182,488
Manila, Philippines, 1887	154,062
Marseille, France, 1896	442,239
Mecca, Turkey in Asia, 1885	60,000

OTHER IMPORTANT CITIES. (<i>Continued</i>)	Population
Melbourne, Australia, 1901	493,956
Mexico, Mexico, 1900	368,777
Milan, Italy, 1898	481,297
Milwaukee, United States, 1900	285,315
Minneapolis, United States, 1900	202,718
Mocha, Turkey in Asia	5,000
Montevideo, Uruguay, 1897	249,251
Munich, Germany, 1900	498,503
Newcastle, England, 1900	214,803
New Orleans, United States, 1900	287,104
Nottingham, England, 1900	239,753
Odessa, Russia, 1897	405,041
Palermo, Italy, 1898	290,951
Para, Brazil, 1892	65,000
Pernambuco, Brazil, 1890	111,556
Perth, West Australia, 1901	36,199
Pittsburg, United States, 1900	321,616
Port-au-Prince, Haiti, 1900	70,000
Portland, Maine, United States, 1900	50,145
Prague, Austria-Hungary, 1890	184,109
Rangoon, Burma, 1901	232,325
Riga, Russia, 1897	256,197
Rochester, United States, 1900	162,608
Rotterdam, Holland, 1900	318,468
St. John's, Newfoundland, 1898	31,142
St. Paul, United States, 1900	163,065
San Francisco, United States, 1900	342,782
Santiago, Chile, 1897	302,131
Shanghai, China, 1897	457,000
Sheffield, England, 1900	380,717
Singapore, Straits Settlements, 1901	228,555
Sofia, Bulgaria, 1900	67,920
Southampton, England, 1900	104,911
Smyrna, Turkey, 1898	200,000
Stockholm, Sweden, 1900	300,624
Sydney, Australia, 1901	488,382
Teheran, Persia, 1897	210,000

OTHER IMPORTANT CITIES. (*Continued*)

	Population
The Hague, Netherlands, 1900	206,023
Trieste, Austria-Hungary, 1890	158,344
Turin, Italy, 1898	355,800
Valparaiso, Chile, 1897	139,038
Venice, Italy, 1898	157,099
Vera Cruz, Mexico, 1895	88,993
Victoria, Hong Kong, China, 1898	248,710
Washington, United States, 1900	278,718
Wellington, New Zealand, 1901	49,344
Yokohama, Japan, 1898	193,762
Zürich, Switzerland, 1898	151,983

HEIGHT OF A FEW MOUNTAIN PEAKS

	Feet
Mt. Everest, Himalaya Mountains, Asia	29,002
Aconcagua, Andes Mountains, Chile	22,860
Mt. McKinley, Alaskan Mountains, Alaska	20,464
Mt. Logan, Coast Ranges, Yukon Territory	19,500
Mt. Elburz, Caucasus Mountains, Russia	18,200
Orizaba, Sierra Madre, Mexico	18,314
Mt. St. Elias, Coast Ranges, Alaska	18,100
Mt. Blanc, Alps Mountains, Switzerland	15,781
Mt. Whitney, Sierra Nevada Mountains, United States	14,898
Mt. Rainier, Cascade Mountains, United States	14,526
Mt. Shasta, Cascade Mountains, United States	14,380
Pike's Peak, Rocky Mountains, United States	14,108
Mauna Loa, Hawaiian Islands	13,675
Fremont Peak, Rocky Mountains, United States	13,790
Fujiyama, Japan	12,365
Mt. Cook, New Zealand	12,349
Mt. Sir Donald, Selkirk Range, British Columbia	10,662
Mt. Stephen, Rocky Mountains, British Columbia	10,425
Loma Tina, Haiti	10,300
Mt. Mitchell, Appalachian Mountains, United States	6,711
Mt. Washington, White Mountains, United States	6,293
Mt. Marcy, Adirondacks, United States	5,344

SOME OF THE LARGEST RIVERS IN THE WORLD

Name	Country	Length in Miles	Basin Area	Ocean
Missouri-Mississippi	United States	4,300	1,257,000	Atlantic
Nile	Africa	3,400	1,273,000	Mediterr.
Amazon	South America	3,300	2,500,000	Atlantic
Obi	Siberia	3,200	1,000,000	Arctic
Yangtse	China	3,200	548,000	Pacific
Kongo	Africa	2,900	1,200,000	Atlantic
Lena	Siberia	2,800	950,000	Arctic
Hoang-Ho	China	2,700	570,000	Pacific
Niger	Africa	2,600	563,300	Atlantic
Plata	South America	2,580	1,200,000	Atlantic
Volga	Russia	2,400	563,300	Caspian
St. Lawrence	Canada	2,200	519,000	Atlantic
Mackenzie	Canada	2,000	590,000	Arctic
Yukon	Alaska	2,000	440,000	Pacific
Indus	India	1,800	372,700	Indian
Danube	Europe	1,770	300,000	Atlantic
Ganges	India	1,500	440,000	Indian

THE GREAT LAKES OF THE WORLD

Name	Length in Miles	Breadth in Miles	Area in Square Miles	Country
Caspian	680	270	169,000	Russia
Superior	390	160	31,200	Canada and U.S.
Victoria Nyanza	230	220	30,000	Africa
Aral	225	185	26,900	Asiatic Russia
Michigan	335	85	20,000	United States
Huron	250	100	17,400	Canada and U.S.
Tanganyika	420	50	12,650	Africa
Baikal	397	45	12,500	Siberia
Erie	250	58	10,000	Canada and U.S.
Winnipeg	275	60	9,000	Canada
Chad (a shallow lake which grows very large in the rainy season and shrinks in the dry season)			about 10,000	

APPROXIMATE AVERAGE HEIGHT OF SOME PLATEAUS

	Feet
Tibet	10,000-15,000
Bolivia	10,000-13,000
Abyssinia	5,000- 7,000
Mexico	5,000- 6,000
Western United States Plateau	5,000- 6,000
Spain	2,000- 3,000
Brazil	2,000- 2,500
Laurentian	500- 2,000

INDEX OF PLACES AND PRONOUNCING VOCABULARY

KEY TO PRONUNCIATION

a, as in *fat*; *ā*, as in *fate*; *ä*, as in *far*; *â*, as in *fall*; *e*, as in *pen*; *ē*, as in *mete*; *é*, as in *her*; *i*, as in *pin*; *ī*, as in *pine*; *o*, as in *not*; *ō*, as in *note*; *ö*, as in *more*; *u*, as in *tub*; *ū*, as in *mute*; *û*, as in *pull*; *y*, as in *get*; *ġ*, as in *gem*; *c*, as in *cat*; *ç*, as in *cent*.

A double dot under a or o (a, o) indicates that its sound is shortened to that of *u* in *but*.

Italicized letters are silent. The sign ' tells upon which syllable the accent is placed. The numbers refer to pages in the book, excepting where Fig. is before them, when they refer to figures in the book.

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